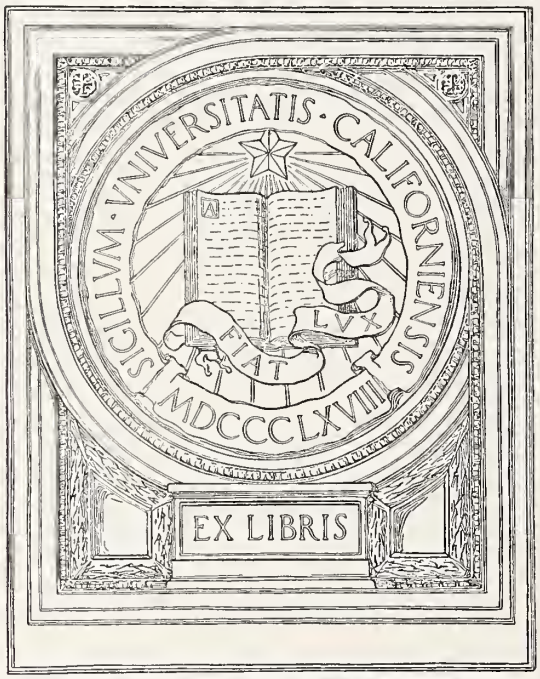
UNIVERSITY OF CALIFORNIA
SAN FRANCISCO MEDICAL CENTER
LIBRARY



Digitized by the Internet Archive
in 2016 with funding from
The National Endowment for the Humanities and the Arcadia Fund

https://archive.org/details/journalofiowamed55unse

JOURNAL of The IOWA MEDICAL SOCIETY

U.C. MEDICAL CENTER LIBRARY
JAN 11 1965
San Francisco 22,

IN THIS ISSUE:

- Lack of Immunization Among Elementary School Children, A Study Conducted in Iowa City—Page 1
- Should We Alter Our Perspective About Gastric Malignancy?—Page 5
- The Etiology and Management of Epistaxis—Page 9
- Mononucleosis in the Aged—Page 18
- Munchausen's Syndrome, A Case Report and a Brief Discussion—Page 20
- State University of Iowa College of Medicine Clinical Pathological Conference—Page 22

AMYTAL TAKES THE EDGE OFF DAYTIME ANXIETY AND TENSION

Amytal is a moderately long-acting barbiturate that takes the edge off daytime anxiety and tension without significant change in mood and attitude. Since Amytal is metabolized in the liver within twenty-eight hours, overlapping of effect is minimized, and renal damage does not constitute an absolute contraindication to the drug.

Side-Effects: Idiosyncrasy or allergic reactions to the barbiturates may occur.

Precautions and Contraindications: Amytal should be used with caution in patients with decreased liver function, since a prolongation of effect may occur. Administration in the presence of uncontrolled pain may produce excitement. Warning—May be habit-forming.

Dosage: Doses should be individualized for each patient. The usual adult sedative dosage ranges from 30 mg. (1/2 grain) to 50 mg. (3/4 grain) two or three times daily.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis 6, Indiana.

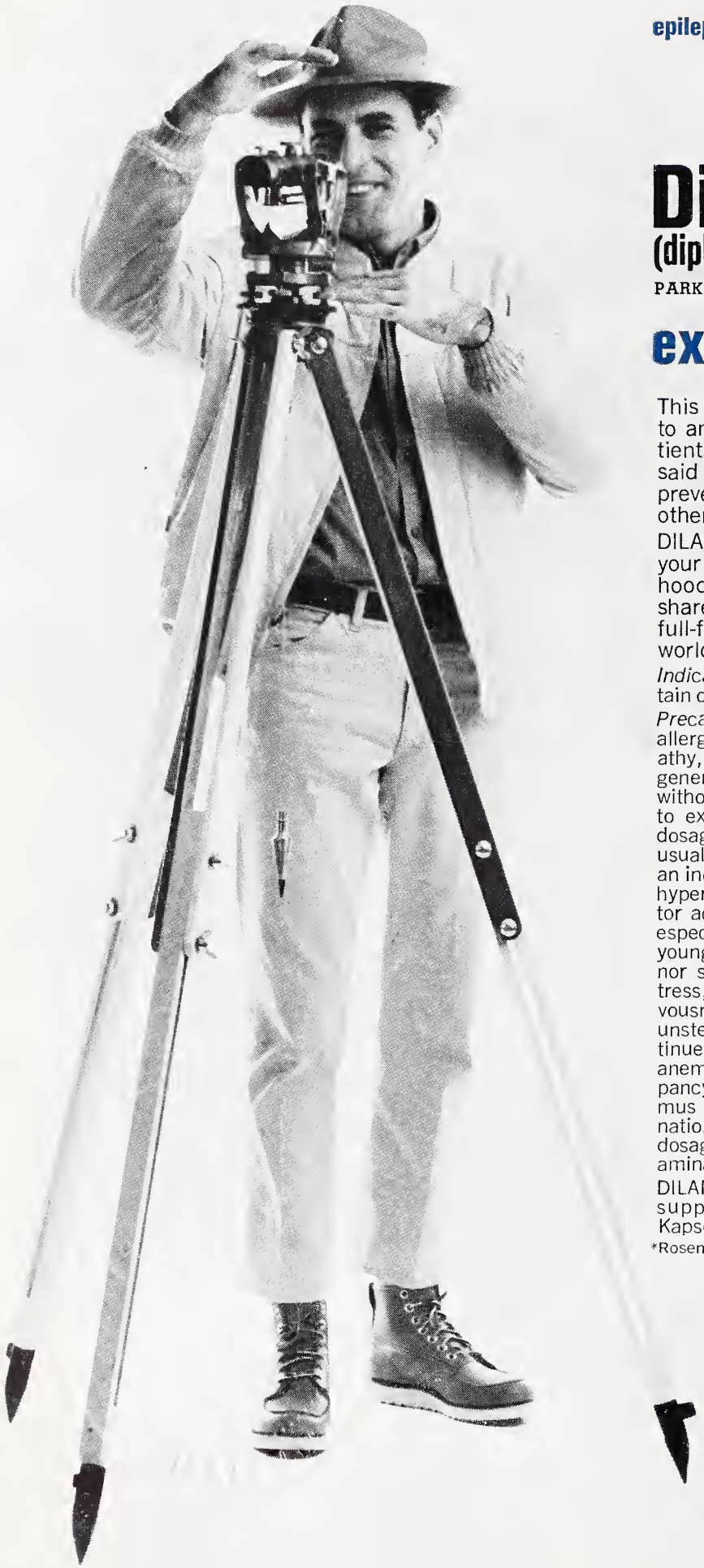
AMYTAL® AMOBARBITAL

Lilly

401174

196166

JANUARY, 1965



epilepsy may limit opportunity...

Dilantin®
(diphenylhydantoin)

PARKE-DAVIS

extends horizons

This agent "...has brought new hope to an entire generation of seizure patients....With judicious use, it may be said that it alone is responsible for the prevention of more seizures than any other drug."*

DILANTIN (diphenylhydantoin) can help your epileptic patient to earn a livelihood...to prove his worth...and to share in the daily give-and-take as a full-fledged member of the workaday world.

Indications: Grand mal epilepsy and certain other convulsive states.

Precautions: Toxic effects are infrequent: allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Eruptions then usually subside. Though mild and rarely an indication for stopping dosage, gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered, especially in children, adolescents, and young adults. During initial treatment, minor side effects may include gastric distress, nausea, weight loss, transient nervousness, sleeplessness, and a feeling of unsteadiness. All usually subside with continued use. Megaloblastic anemia, aplastic anemia, leukopenia, granulocytopenia and pancytopenia have been reported. Nystagmus may develop. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. Periodic examination of the blood is advisable.

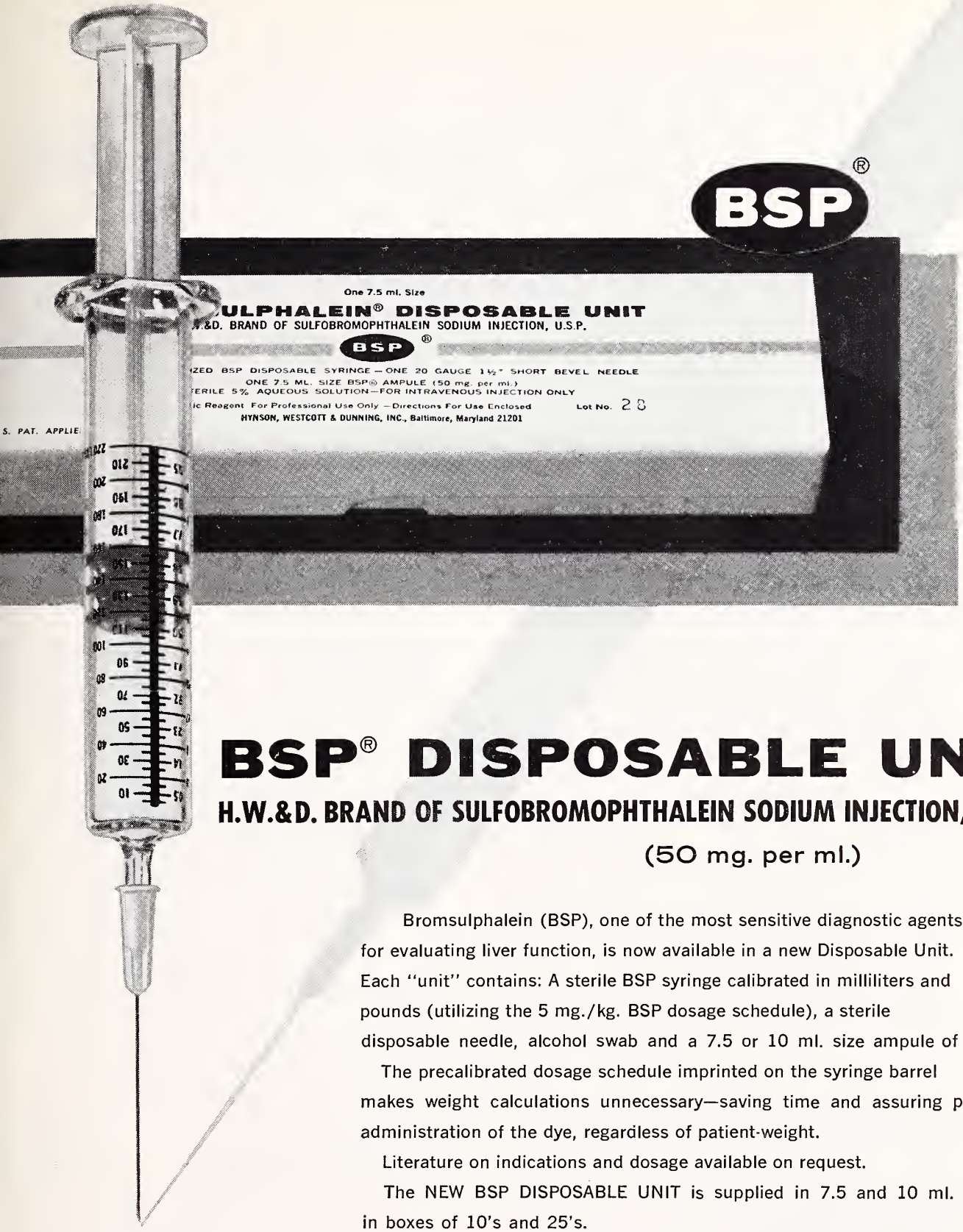
DILANTIN (diphenylhydantoin sodium) is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm.

*Roseman, E.: *Neurology* **11**:912, 1961.

33664

PARKE-DAVIS

PARKE, DAVIS & COMPANY, Detroit, Michigan 48232



BSP® DISPOSABLE UNIT

H.W.&D. BRAND OF SULFOBROMOPHTHALEIN SODIUM INJECTION, U.S.P.

(50 mg. per ml.)

Bromsulphalein (BSP), one of the most sensitive diagnostic agents for evaluating liver function, is now available in a new Disposable Unit. Each "unit" contains: A sterile BSP syringe calibrated in milliliters and pounds (utilizing the 5 mg./kg. BSP dosage schedule), a sterile disposable needle, alcohol swab and a 7.5 or 10 ml. size ampule of BSP.

The precalibrated dosage schedule imprinted on the syringe barrel makes weight calculations unnecessary—saving time and assuring proper administration of the dye, regardless of patient-weight.

Literature on indications and dosage available on request.

The NEW BSP DISPOSABLE UNIT is supplied in 7.5 and 10 ml. sizes in boxes of 10's and 25's.

HYNSON, WESTCOTT & DUNNING, INC.

(BSP01)

BALTIMORE, MARYLAND 21201

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV JANUARY, 1965 No. 1

CONTENTS

Lack of Immunization Among Elementary School Children: A Study Conducted in Iowa City
Burdellis L. Carter, R.N., M.S., and Robert B. Kugel, M.D. 1

SCIENTIFIC ARTICLES

Should We Alter Our Perspective About Gastric Malignancy?
W. Turner Bynum, M.D. 5

The Etiology and Management of Epistaxis
Leslie Bernstein, M.D., D.D.S. 9

Mononucleosis in the Aged
Roy W. Overton, M.D., and William Shutze, M.D. 18

Munchausen's Syndrome: A Case Report and a Brief Discussion
M. Don George, M.D., and J. S. Cheatham, M.D. 20

State University of Iowa College of Medicine Clinical Pathological Conference 22

EDITORIALS

King-Anderson Is Still Unwise 31

Please Take Part in the Readership Survey . . 31

Prednisone for Herpes Zoster 32

Should We Change Our Treatment for Shock . . 33

The Treatment of Fat Embolism 33

A New Triumph for Fluoridation 34

Surgery for Intestinal Obstruction in the Newborn 34

SPECIAL DEPARTMENTS

Coming Meetings 35

President's Page 40

Journal Book Shelf 41

Iowa Chapter of the American Academy of General Practice 43

The Doctor's Business 45

Iowa Association of Medical Assistants 47

State Department of Health 48

Woman's Auxiliary News 51

Month in Washington xxii

Personals xxv

Deaths xxxviii

MISCELLANEOUS

Actions of the AMA House of Delegates in Miami Beach, November 21-December 2, 1964 . . . 36

A Résumé of the Iowa Symposium on the Ecology of Rabies 38

Future M.D. Supply xxxix

AMA to Issue Family Health Guide xliii

Philadelphia Doctors Warn of Hospital System Collapse xliii

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor..... .....Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D.....Iowa City
Floyd M. Burgeson, M.D.....Des Moines
Daniel A. Glomset, M.D.....Des Moines
Robert N. Larimer, M.D.....Sioux City
Daniel F. Crowley, M.D.....Des Moines

PUBLICATION COMMITTEE

Samuel P. Leinbach, M.D.....Belmond
Cecil W. Seibert, M.D.....Waterloo
John H. Sunderbruch, M.D.....Davenport
Richard F. Birge, M.D., Secretary.....Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

Lack of Immunization Among Elementary School Children

A Study Conducted in Iowa City

BURDELLIS L. CARTER, R.N., M.S.
Bloomington, Indiana, and
ROBERT B. KUGEL, M.D.
Providence, Rhode Island

One of the functions of a school health program, as set forth by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, is to help prevent and control communicable diseases. Health appraisal, including health and dental examinations by physicians and dentists, health observation and assessment by the classroom teachers, and vision and hearing screening by either the teachers or the nurse, prevention and control of communicable diseases, promotion of safety, first aid and emergency care, and remedial and follow-up services—all these are parts of the school health services.

The control of communicable diseases is based upon three activities: (1) limiting the spread of disease; (2) preventing complications and reducing the number of fatalities; and (3) stimulating the body's own defense mechanisms.[2] It is with the last of these methods that the school health services' immunization programs are concerned.

A voluntary immunization program in which 85 per cent or more of entering elementary students are immunized against diphtheria, smallpox and poliomyelitis would prevent an outbreak of epidemic proportions.[1] Immunizations are effective in controlling communicable diseases only in proportion to the numbers of susceptible persons who have been immunized.

Miss Carter, formerly an instructor at the U. of I. College of Nursing, is now a visiting lecturer, Division of Nursing Education, Indiana University. Dr. Kugel, formerly an associate professor of pediatrics at U. of I., is now a professor of medical science at Brown University.

THE UNIVERSITY ELEMENTARY SCHOOL

The University Elementary School at the State University of Iowa was selected as a sample group in which to study the current status of children's immunizations against diphtheria, pertussis, tetanus, poliomyelitis and smallpox. Since the University Elementary School is an integral part of U. of I., it has no school district and admits students by application. It is operated as a demonstration, laboratory and research center. The parents of many of the students are professional people, and for the most part they represent the upper-middle and lower-upper families, socio-economically. For a number of years it has been the general consensus that people from such groups are aware of the health needs of their families. People in university circles travel considerably, both within and beyond the borders of the United States, and particularly for this reason it might be assumed that they would maintain a high level of immunization. Moreover, a school health program was instituted at University Elementary School in 1960, and it was felt that the adequacy of the students' immunization must be above average. Yet, in the 1962 annual report "Current Status of University School Health Program," Lyford had emphasized that "the level of protection in the school against communicable diseases still needs to be determined."

RESULTS OF OTHER LOCAL STUDIES

In 1957, the Johnson County Health Council had surveyed the public and parochial schools of Iowa City, the University Elementary School and the Coralville Elementary School, kindergarten through sixth grade, to determine the percentage of students who had received any immunizations for diphtheria, pertussis, tetanus, poliomyelitis and smallpox. It found that about 82 per cent of the students had been immunized at some time.[3] One must keep in mind, however, that those studies did not determine the current status of the immunizations.

STATE LAWS AND REGULATIONS

According to the Code of Iowa, a local board of health may make its own regulations regarding communicable disease control, as long as they are not in conflict with state regulations.

The Iowa State Department of Health recommends:

1. That *every* person be immunized against smallpox, poliomyelitis and tetanus.

2. That *every* child be immunized against pertussis, diphtheria and tetanus, and vaccinated against smallpox by a private physician or by a local health authority.[4]

METHODS OF RESEARCH

The sample surveyed consisted of the entire student body at University Elementary School—202 boys and girls enrolled in kindergarten through sixth grade—who began and completed the 1962-1963 school year at the school.

Each student's health-history record is returned to his parents at the start of each school year, to be brought up to date and returned to the school. Parents of each transfer student are asked to have a Physical Examination Form completed. Thus, each set of parents had been asked to report the series, month and year, for the DPT and poliomyelitis inoculations their child had received, and the years of the primary and repeat smallpox vaccinations.

The immunization procedure of the Department of Pediatrics at the U. of I. College of Medicine was selected as the model for evaluating the status of each student's immunizations. It is as follows:

TABLE 1

IMMUNIZATION SCHEDULE, U. OF I. DEPARTMENT OF PEDIATRICS

Immunization	Recommended Age
Initial Series	
DPT and Polio	1½ to 2 months
DPT and Polio	3 months
DPT and Polio	4 months
Smallpox	5 to 6 months
Boosters	
DPT and Polio	14 to 18 months
Polio	2 years
DT and Polio	4 years
DT, Polio and Smallpox	6 years
DT and Polio	8 years
Polio	10 years
Smallpox	11 years
DT and Polio	12 years

In view of the fact that some students might have started their initial series of immunizations later than infancy, an alternative schedule was established, as follows:

TABLE 2

ALTERNATIVE IMMUNIZATION SCHEDULE

Immunization	Timing
DT	Initial series and boosters at two-year intervals until 8 yrs. of age; then at four-year intervals.
Pertussis	Initial series, plus one booster after one year.
Poliomyelitis	Initial series and boosters at two-year intervals.
Smallpox	At five-year intervals.

For the purposes of this study, immunizations were considered inadequate if more than the indicated length of time had elapsed between the initial series and the boosters, if more than the indicated length of time had elapsed between boosters, or if the immunizations had not been brought up to date. For example, if the initial smallpox vaccination was done at age 6 mos., but the revaccination was not done until the child reached 7 yrs. of age, it was considered inadequate. Although authorities recommend a program of immunization like the one used in this study, it is possible that it is more frequent than is really necessary.

For each student, the following data were obtained from the records: (1) Address (urban, if within Coralville, Iowa City or University Heights; rural, if outside those areas). (2) Length of enrollment in University Elementary School (full time, if pupil entered in kindergarten; partial time, if he or she entered in the first grade or thereafter). (3) Type of physician (general practitioner, private pediatrician or staff member in the U. of I. Department of Pediatrics). (4) Evaluation of DPT, polio and smallpox immunizations, and an evaluation of the total immunizations. If the student had received no immunizations, that fact was noted. The percentages of students in each of the categories were determined for each grade and for the total school population. Percentages were rounded to the nearest tenths.

RESULTS

Table 3 shows the percentages of students in each grade and in the whole school who were adequately or inadequately immunized. On the basis that an epidemic outbreak of diphtheria, smallpox or poliomyelitis will not occur if 85 per cent of all entering elementary pupils are immunized, the situation at University Elementary School was found to be far from satisfactory. According to

TABLE 3

IMMUNIZATIONS, UNIVERSITY ELEMENTARY SCHOOL, IOWA CITY, 1962-63 BY GRADE LEVEL

Grade	Number of Pupils	Per Cent Immunized With			Per Cent Adequately Immunized
		DPT Vaccine	Poliomyelitis Vaccine	Smallpox Vaccine	
Kindergarten	29	44.8	75.9	96.5	34.5
1	29	37.9	75.9	65.5	24.1
2	29	10.3	34.5	48.3	3.5
3	30	3.3	53.3	53.3	3.3
4	28	0.0	53.6	71.4	0.0
5	29	3.5	51.7	10.3	3.5
6	28	0.0	75.0	46.4	0.0
Total School	202	14.4	59.9	57.4	9.9

Table 3, only 9.9 per cent of the total school population were adequately immunized for diphtheria, pertussis, tetanus, poliomyelitis and smallpox. A total of 14.4 per cent were adequately immunized for diphtheria, pertussis and tetanus; 59.9 per cent for poliomyelitis; and 57.4 per cent for smallpox. For the most part, a larger percentage of students in kindergarten and first grade were adequately immunized than of students in the upper elementary grades. Though to date an epidemic has not occurred, these results indicated that there was a potential for an epidemic of communicable disease at the University Elementary School.

Table 4 provides a breakdown of adequately and inadequately immunized students according to place of residence, length of enrollment at University Elementary School, and type of physician. It indicates that home environment had little influence on the adequacy of immunizations, although the percentage of adequately protected students living in urban areas was slightly higher than the percentage of adequately protected youngsters whose homes were outside of the towns. The percentage of satisfactorily immunized students who had attended University Elementary School from the beginning exceeded the percentage of fully immunized youngsters who had started school somewhere else. Again, neither of these groups had adequate immunizations for the control of communicable disease.

General practitioners are shown to have seen 31.2 per cent of the students, private pediatricians

TABLE 4

IMMUNIZATIONS, UNIVERSITY ELEMENTARY SCHOOL, IOWA CITY, 1962-63
BY PLACE OF RESIDENCE, CONTINUITY OF ENROLLMENT, AND TYPE OF PHYSICIAN

	Percentage of Students	Per Cent Immunized With			Per Cent Adequately Immunized
		DPT Vaccine	Poliomyelitis Vaccine	Smallpox Vaccine	
Address					
Urban	72.8	15.0	61.2	59.9	10.9
Rural	27.2	12.7	56.4	50.9	7.3
Continuity of Enrollment					
From beginning	78.7	15.7	60.4	63.6	11.3
Transfer pupils	21.3	9.3	58.1	34.9	4.7
Type of physician					
GP	31.2	12.7	49.2	42.9	7.9
Pediatrician in private practice	40.6	17.1	63.4	85.4	15.9
Staff member, U. of I. Pediatrics Dept.	27.2	12.7	67.2	34.5	3.6

had seen 40.6 per cent, and staff members of the U. of I. Department of Pediatrics had seen 27.2 per cent, but none of these groups had immunized an adequate share of their patients, at least on the basis of this sample. The private pediatricians had cared for a higher percentage of the pupils who were found to be fully immunized (15.9). They had immunized 17.1 per cent of their patients for diphtheria, pertussis and tetanus, and 85.4 per cent for smallpox. Staff members of the U. of I. Department of Pediatrics had immunized the highest percentage (67.2) for poliomyelitis.

It can be noted that all students had received some type of immunization. All had received the initial DPT series. Three students, however, had received no polio vaccine, and eight had received no smallpox vaccine.

DISCUSSION

Several authorities on school health have recommended school immunization programs.[1, 2, 5] Top[5] recommends that the program be a voluntary one carried out by private physicians. A public education program extended over a long period of time will probably be the best method of getting parents to maintain an approved immunization schedule for their children. Anderson and Arnstein contend that "the immunization of school children is the most effective measure for the control of communicable disease in that age group." Freeman maintains that if a school is to have an on-going immunization program, written permissions from the parents must be obtained prior to administration of the immunizations. It is better, according to her, for the program to be carried out by the family physicians.

According to this study, the total population of University Elementary School, Iowa City, was inadequately immunized for diphtheria, pertussis, tetanus, poliomyelitis and smallpox. Thus an epidemic was possible. The involving agent will seek a susceptible host, and the greater the number of susceptible hosts, the greater the likelihood of an epidemic.

It was found that students living in urban areas were slightly better immunized than those living in rural districts. Although the American population is thought to be urban, there seems to be a shift to the suburbs, where children have more opportunities for contact with nature and where, in many instances, building and sanitary codes are inadequate. This combination of factors could contribute to the increase of communicable diseases.

Those students who had attended University Elementary School from the beginning were better immunized than those who had started in the first grade or later. Apparently, concentrated efforts were made to immunize children when they entered school, but these efforts were not aimed also at the older children or they were ineffective. If all schools emphasized immunization for preschool children and emphasized the maintenance of it for older youngsters, probably more transfer students would be properly immunized.

Those students who had been seen by pediatricians in private practice were better immunized than those who had been seen by general practitioners or by Department of Pediatrics staff physicians. All physicians should vigorously promote an immunization program.

All children in this sample had received some type of immunization, and the difficulty is that in most cases it wasn't continued on a regular basis. The religious-objection factor was not present in this group, though in some areas it may be a problem both for the physicians and for the school authorities.

Why does inadequate immunization occur, where few or no parents have religious objections? A lack or an intermittency of reminders leaves parents confused about the inoculation programs that are necessary, or leaves them apathetic about maintaining them for their children. The cost of immunizations, especially for families with several children, may also be a limiting factor.

Are physicians apathetic? How should the local, state or federal government promote greater leadership? Should a more aggressive program be instituted? Will more public education be effective? All of these questions require further study.

SUMMARY

The health records of 202 boys and girls enrolled at University Elementary School, Iowa City, during the 1962-63 school year were reviewed to determine the current status of immunizations for diphtheria, pertussis, tetanus, poliomyelitis and smallpox. Although no epidemic of communicable disease has occurred there, there is a potential for one.

In order to overcome the factors leading to inadequate immunizations, schools should institute vigorous immunization campaigns. Accurate health records must be maintained by the schools in order to assure the adequacy of their programs.

Questions have been raised as to why the level of immunizations was so low in this group of children from middle- and upper-class homes.

REFERENCES

1. Anderson, C. L.: School Health Practice. St. Louis, The C. V. Mosby Company, 1960.
2. Bower, Albert G. and Pilant, Edith B.: Communicable Diseases: A Textbook for Nurses. Philadelphia, W. B. Saunders Company, 1953.
3. Report of Iowa City—Johnson County Immunization Survey. IOWA CITY PRESS-CITIZEN, January, 1957.
4. Manual of Approved Immunization Procedures and Techniques. Des Moines, Iowa State Department of Health, 1958.
5. Top, Franklin H.: Communicable and Infectious Diseases. St. Louis, The C. V. Mosby Company, 1960.
6. Freeman, R. B.: Public Health Nursing Practice. Philadelphia, W. B. Saunders Company, 1963.

Scientific Articles

Should We Alter Our Perspective About Gastric Malignancy?

W. TURNER BYNUM, M.D., F.A.C.P.
Oklahoma City, Oklahoma

MALIGNANCY IS ALWAYS a possibility when the clinician is confronted by a lesion of the gastric mucosa. The x-ray appearance remains the single most important guide in determining our approach to the problem. In a large percentage of cases, the x-ray reveals typical diagnostic findings, and the best method of therapy is thus clearly delineated, but what is to be done in the far greater number of instances in which the radiograph is not definitive?

I should like briefly to review the most rational approach to this large grey area where the clinician's judgment is sorely taxed, and to tell you of our experiences with the newer additions to our armamentarium.

As in all approaches to difficult diagnostic problems, a careful history and a thoughtful evaluation of the individual patient are of paramount importance. The degree of gastric function is undoubtedly important, but it may be gravely misleading. It is the most important laboratory determination, and correlating it properly may be crucial. Other aids such as a complete blood count and a differential, a sedimentation rate, a quantitative determination of melena (with the patient on a meat-free diet), the Einhorn string test and gastroscopy, as well as weight and temperature records, may be helpful, but they are often misleading.

The frequency with which these common signs and symptoms either are misinterpreted or are actually deceptive has caused an almost alarming defeatist attitude to engulf a large segment of our profession. The unbelievers are spreading the doctrine that more and earlier mutilating surgery should be done on all patients with questionable lesions. Many of them advocate disabling surgery on any and all lesions involving the stomach, and they use the possibility of malignancy to justify their aggressions.

They fail to recognize that there are at least 19 benign lesions of the stomach for every malignant one,[1, 2] and they wink at the fact that on some very fine surgical services the surgical mortality rate exceeds the five-year survival rate, even in the proven cases of malignancy. Some of my surgical colleagues at the University of Oklahoma persist in this attitude despite the full knowledge that of the patients who had subtotal gastrectomies on one of our teaching surgical services during an 18-month period approximately 10 years ago, not a single one has ever returned to his preoperative level of productivity, and no more than one in 10 has ever returned to any productive enterprise.

In our 235-bed general hospital during the first 10 months of 1960, a total of 96 gastric resections were performed. Fifty of the patients were operated upon for one complication or another of peptic ulcer, and 46 were operated upon because of a diagnosis or suspicion of gastric malignancy. Of this group, only 10 proved to have malignancies. Conversely, in a vain endeavor to save only two lives, 36 patients lost considerable portions of their stomachs unnecessarily, with some resultant mor-

---

Dr. Bynum, a professor of medicine at the University of Oklahoma, made this presentation at the 1964 annual meeting of the Iowa Medical Society, in Des Moines. The study that he describes was supported in part by Research Grant No. C-5825, U. S. Department of Health, Education and Welfare.

tality-morbidity. Of the malignant group, as I just intimated, only two had survived less than two years later, and both of them had lymphosarcomatous lesions that most of us believe could have been better treated by radiation therapy alone.

The radioautographic balloon test developed by Ackerman and Wangensteen,[3] at the University of Minnesota, showed great promise as an ancillary diagnostic procedure for the early detection of gastric malignancies. Since December, 1960, we have performed a total of 121 tests with this device, on 110 patients. For our studies, we have used only patients with proved esophageal or gastric lesions. Our results to date have been disappointing. In 18 patients on whom positive balloon tests have been obtained, the results were false-positives in four instances. There was one false negative in the series.

Most of our difficulties have been technical. Artifacts of one sort or another have occurred in the developed emulsion of the various balloons prepared by the Eastman Kodak Company. The preparation of an elastic emulsion is an extremely difficult technical problem, and in spite of heroic efforts, the manufacturer has not solved it. Until a balloon can be coated with an emulsion that will give reproducible results, the balloon test won't constitute a reliable diagnostic procedure.

When we started our study, we noted that bits of tissue, which proved to be epithelium from the gastric mucosa, were present in the developing solutions. These bits of tissue had been detached, we believe, because of the anticholinergic effect of the Pro-Banthine given prior to the insertion of the balloon and the reduction of gastric secretion. Then, when the balloon was deflated, representative material from the gastric mucosa was trapped and brought away in the folds of the balloon. This occurrence led us to conclude that even though the balloon test *per se* has questionable value, it at least might provide us a means of recovering satisfactory material from the stomach for cytologic study.

An extremely helpful adjunct in the recovery of satisfactory specimens was suggested by Ackerman[4]—the use of a modified Miller-Abbott tube so that continuous suction may be applied in the portion of the double lumen lying in the esophagus. Naso-pharyngeal and oral secretions can thus be prevented from entering the stomach. It has enabled us to secure more satisfactory preparations than we had obtained by gastric lavage, using either forceful saline or chymotrypsin solutions.

The large quantities of irrigating solution that had to be concentrated by some means constituted a principal difficulty with the earlier method. Either filtration or centrifugation resulted in distortion or destruction of many of the cells, and an abundance of mucus and debris was always present in the smears.

Besides examining all preparations by conventional Papanicolaou stains[5] or hematoxylin-eosin technics, we have also examined all of them by fluorescence microscopy, using the staining technic originated by Bertalanffy.[6, 12-22]

The results of our cytologic examinations have correlated much better with final diagnoses than have the balloon test results or cytologic studies in which we used older methods. Of 110 patients examined to date, we have had positive cytologies on 18. One result was possibly false, and in addition we have had one false-negative result.

We feel that the fluorescent cytodiagnostic method is superior to conventional stains for identification of malignant cells from gastric mucosa. Artifacts—e.g., cellular debris, red blood cells and bacteria—which frequently render a smear unsatisfactory for examination by Papanicolaou stain, can more easily be identified by the fluorescence method. An excellent review with somewhat different conclusions has been published by Ventzke.[7]

It should be emphasized that for satisfactory results, the staining technic as outlined by Bertalanffy must be strictly followed. Morphologic detail in our preparations had been satisfactory. Positive smears have satisfied the usual criteria based on morphology, and in addition there has been the histochemical differential made possible by acridine orange fluorescent staining. The brilliant orange-red fluorescence of malignant cells, based on their increased content of ribonucleic acid, make the identification of the cells relatively easy even when malignant cells are present in very small numbers. Although it is true that any rapidly growing cell shows fluorescence, if non-malignant its color is less intense. Benign inflammatory epithelial cells have a dull brick-red coloration, but it should be emphasized that a diagnosis cannot be made on color-changes alone.

MATERIALS AND METHODS

Only the details of methods for cytologic studies will be given here.

The patient, after fasting for eight hours, is given Pro-Banthine 15 mg., and Nembutal 100 mg. 30 minutes prior to the test. A balloon is tied on the lower portion of the double-lumen tube. When the balloon has been inflated, continuous suction is applied to prevent saliva, and nasopharyngeal and esophageal secretions from entering the stomach. By this means a more representative sample of the gastric epithelium is obtained, uncontaminated by esophageal and nasopharyngeal cells.

All of our patients have had thorough work-ups by conventional methods. All have had x-rays. Numerous touch preparations are taken from the balloon upon its removal, and it is then reinflated in the region of the suspected lesion.

In our admittedly preliminary and exploratory

studies, we have been able to obtain satisfactory cytologic preparations in over 50 per cent of our limited number of cases. We feel confident that with more experience, and possibly with further improvement in our technics, we shall obtain a much higher yield and more definitely diagnostic material.

A double-lumen tube technic for obtaining material from different levels of the esophagus has recently been described by Chossein and Britsch.[8] It utilizes the principle of regional lavage, and should prove helpful in the recovery of satisfactory material for cytologic study. With any lavage technic, the recovery of cells from a large quantity of fluid is a problem. By making direct touch preparations from material adherent to the outside of the balloon, we have been able to obtain satisfactory preparations in a large percentage of cases.

RESULTS

Among 110 patients studied, 85 satisfactory follow-ups have been completed. Twenty-five have been lost to follow-up. By "lost," we mean either that the diagnosis was confirmed by surgery or by follow-up x-ray, or that the patient had been asymptomatic for six months of more or had died of the disease process.

Among the 85 patients on whom satisfactory follow-ups were obtained, 78 of the preoperative, autopsied or pre-treatment diagnoses were confirmed. In this group, only two patients with malignancy who had been falsely diagnosed as having benign lesions and had been treated by medical means might have been amenable to surgical measures at the time of their initial consultations.

Unfortunately our records don't reveal which of the tests were most responsible for the clinicians' diagnoses, and we haven't made a control study of a similar group upon whom cytologic studies were not performed. However, as more confidence in the interpretation of these accumulated non-surgical measures has grown, an altered attitude toward handling these patients has evolved. The following two cases will demonstrate it.

CASE REPORT NO. 1

G.M., a 55-year-old housewife was seen May 14, 1963. A diagnosis of Hodgkin's disease had been made in her case, in 1957, from a lymph-node biopsy. She had then been given 5,400 r. of total-body radiation, and there had been a remission until 1960, when she was given 2,400 r. for a recurrence. On admission to the hospital, she was found to have a large infiltrating lymphoma of the stomach wall, with a 3 cm. ulceration high on the greater curvature. She was again given 2,400 r. to the tumor, and she experienced a remission. In September, 1963, when she was next seen, she had hypoplastic bone marrow and lymphatic leukemia. She was given Leukeran for five days, and there was a remission of the leukemic findings but an increase in the hypoplastic anemia (hemoglobin 8.25 Gm. per cent; hematocrit 29 per cent; white blood count 3,000/cu. mm.; platelets 60,000/cu. mm.). In November, 1963, a 2.5 cm. benign gastric ulcer had developed on the lesser curvature, and it responded promptly to rest and medical management, despite the persistence of hypoplastic bone marrow and anemia.

CASE REPORT NO. 2

N.R. is a 52-year-old white female. A skeletal x-ray was normal following an accident in which she was involved on November 15, 1963. She was seen on December 28, 1963, because of severe back pain, and was found to have compression fractures of the 8th and 10th dorsal vertebrae, following minor trauma and chiropractic "adjustments." These were regarded as pathologic fractures by a radiologist and an orthopedist. Upper-gastrointestinal x-ray revealed both gastric and duodenal ulcer niches, with gastric hyperfunction. All other indicated laboratory tests were normal. The patient became asymptomatic on medical management, and the ulcer craters disappeared.

THE GASTRECTOMIES HAVE DECREASED

Our hospital admitted and surgery was performed on more patients who proved to have gastric malignancy in 1963 than in the first year of this study. In 1960, as I pointed out earlier, 96 gastrectomies were done—at least 36 of them because of an inability to exclude malignancy, though there was none. In that same year there were 14 surgically proved cases of gastric malignancy. In 1963, only 35 gastrectomies were performed, and 18 of the lesions proved to be malignant on tissue section. These figures do not reflect a decrease in surgical activity, since more laparotomies were done in 1963 than in 1960.

How does one account for this rather remarkable decrease in the over-all number of gastrectomies? These figures come from a moderate-sized teaching hospital where there has been no marked change in the staff or in the people served by the hospital, and no decrease in the number of patients with gastric malignancies who were admitted. During this period there has been a lessening of enthusiasm among surgeons for radical gastric resection as the treatment for duodenal-ulcer disease. The amount of stomach removed by those still impressed by this means of treating gastric hyperfunction is diminishing, and thus far we do not see so many of the crippling results of the more radical subtotal resections.

Newton and Judd,[9] of the Mayo Clinic, report on the basis of a long-time follow-up that the Billroth I procedure is inadequate to control peptic ulcer, and Moeller, *et al.*,[10] from the University of California, report impaired fat absorption in post-gastrectomy patients. This, along with the

better-recognized dumping syndrome, failure to gain weight, distasteful eructations, general weakness, prolonged convalescence and over-all unproductivity that plague such a large percentage of subtotal-gastrectomy patients! Wiznitzer,[11] incidentally, reports that dumping occurs as readily after gastroenterostomy and vagotomy as following partial gastrectomy.

With these increasing indictments of elective gastric surgery, should we not take a hard second look at the oft-repeated surgical dictum "All patients with gastric ulcers should be operated upon because of the possibility of malignancy"?

It would appear that at least some of the surgeons who so recently have been espousing the more radical surgical attack on the peptic-ulcer patient have been "getting their fingers burned," or at least are mellowing. In any event, applause should greet the swinging of the pendulum away from more and earlier mutilating surgery for this "stress disease." It is doubtful, however, that surgeons generally have awakened to their excesses, or that the fashion in treating these patients has changed as definitely as these figures seem to indicate.

In October, 1960, our hospital established a facility to perform autoradiographic balloon studies and the cytologic studies that I have outlined, and undertook to perform them free of charge on any patient with a demonstrated gastric or esophageal lesion. Through the use of these additions to the more conventional methods, our group has achieved a preoperative diagnostic accuracy of 90 per cent.

The greatest serendipity of these efforts seems to have been to cause considerably greater individualization and more careful and intensive medical management of patients with gastric hyperfunction. It is felt that in this way these studies have contributed materially in reducing needless surgery, with its mortality and morbidity.

In a disease where the surgical mortality may exceed the cure rate, where careful analyses of conventional diagnostic procedures supplemented by cytologic studies have enabled us to diagnose 90 per cent of cases correctly without surgery, are we being audacious in questioning the time-honored dictum that the disease can be conquered only through earlier and more radical surgery? Do the facts warrant ignoring the needless morbidity and mortality imposed on patients who are only suspected of harboring a gastric malignancy?

In April, 1964, Kim *et al.*[23] reported to the American Gastroenterological Association that beta glucuronidase had been found significantly increased in the gastric juices of all 25 of a group of patients with proved gastric malignancy. In contrast, this substance was elevated in only three of 73 patients with either benign gastric ulcer, pernicious anemia or no gastrointestinal disease. Kim assures us that the determination is quite simple by his method of assay, the limiting factor being that β-glucuronidase is destroyed by a pH below 3.5. In our series of 18 proved gastric malignancies, there were two patients with pH values of gastric contents below 3.0

If this work can be confirmed, we may have an even simpler method of screening patients for suspected gastric malignancy. In any event, this method should offer yet another and simpler means of distinguishing the benign from the malignant lesion, and thus it should permit us to take another step toward the avoidance of needless surgery. To quote Barborka and Texter,[1] "If patients with ulcerating carcinoma can be differentiated from patients with benign ulceration, surgery will not have to be performed on patients with benign gastric ulcers solely because of fear of carcinoma."

SUMMARY

A review of experiences in a three-year investigation of problems related to gastric malignancy has been presented. Radioautography and fluorescence, as well as Papanicolaou cytology studies, were employed to augment conventional investigative measures. One hundred twenty-one such studies on 110 patients form the basis for this report.

Radioautography, in our hands, was not found to be reliable. Cytologic preparations from the balloons gave better results than specimens obtained from gastric washings or abrasive methods. A promising new method of screening for gastric malignancy using beta glucuronidase has been discussed.

In a moderate-sized (235-bed) teaching hospital, the incidence of gastric resection has dropped 62 per cent during the course of this study. The reasons for this reduction have been discussed.

The importance of reappraising conventional attitudes toward gastric malignancy has been emphasized.

REFERENCES

1. Barborka, Clifford J., and Texter, E. Clinton, Jr.: Peptic Ulcer. Boston, Little, Brown and Company, 1955, p. 245.
2. Ivy, A. C., Grossman, M. I., and Bachrach, William H.: Peptic Ulcer. New York, Blakiston, 1950, p. 849.
3. Ackerman, N. B., McFee, A. S., and Wangensteen, O. H.: Refinements in technique of in vivo radioautography of stomach. Surgery, **51**:295-299, (Mar.) 1962.
4. Personal communication from Dr. Norman B. Ackerman.
5. Papanicolaou, G. N.: Atlas of Exfoliative Cytology. Cambridge, Massachusetts, Harvard University Press, 1954.
6. Bertalanffy, F. D.: Application of acridine orange fluorescence microscopy to cytological cancer diagnosis. Laboratory Digest, Vol. 25, Nos. 7 and 8, (Feb.) 1962.
7. Ventzke, L. E.: Fluorescence microscopy with acridine orange in gastrointestinal cytology. Gastroenterol., **45**:712-717, (Dec.) 1963.
8. Chossein, M. B., and Britsch, C. J.: New method with double-lumen tube as means of obtaining esophageal and gastric washings for cytologic studies. Am. J. Clin. Path., **37**:279-281, (Mar.) 1962.
9. Newton, S. E., III, and Judd, E. S.: Long term follow-up proves Billroth I gastric resection inadequate for permanent control of duodenal ulcer. Surg., Gynec. & Obst., **116**: 170-174, (Feb.) 1963.
10. Moeller, H. C., Lee, H., and Rider, J. A.: Impaired fat

absorption in postgastrectomy patient. Am. J. Gastroent., **39**: 107-113, (Feb.) 1963.
11. Wiznitzer, T., Menczel, J., and Czaczkes, W.: Dumping syndrome after gastric surgery; comparative study of experimentally produced dumping syndrome after gastroenterostomy with vagotomy and partial gastrectomy. Arch. Surg., **86**:291-294, (Feb.) 1963.
12. von Bertalanffy, L., Masin, F., and Masin, M.: Use of acridine orange fluorescence technique in exfoliative cytology. Science, **124**:1024-1025, (Nov. 23) 1956.
13. von Bertalanffy, L., Masin, H., and Masin, F.: New and rapid method for diagnosis of vaginal and cervical cancer by fluorescence microscopy. Cancer, **11**:873-887, (Sept.-Oct.) 1958.
14. Bertalanffy, F. D.: Diagnostic reliability of acridine-orange fluorescence microscope method for cytodiagnosis of cancer. Cancer Res., **21**:422-426, (Apr.) 1961.
15. Liu, W.: Fluorescence microscopy in exfoliative cytology: II. application to genecologic cytology. Arch. Path., **71**: 286-294, (Mar.) 1961.
16. Betts, A., Achenbach, R. R., and Friedell, G. H.: Evaluation of fluorescent cytology. Arch. Path., **73**:250-253, (Mar.) 1962.
17. Wellman, K. F., McDermott, M. A., and Gray, E. H.: Evaluation of acridine-orange fluorescence microscopy in cytology. Acta Cytol., **7**:111-117, (Mar.-Apr.) 1963.
18. Dart, L. H., and Turner, T. R.: Fluorescence microscopy in exfoliative cytology; report of acridine orange examination of 5,491 cases, with comparison by Papanicolaou technic. Lab. Invest., **8**:1513-1522, (Nov.-Dec., pt. ii) 1959.
19. Raskin, H. F., Kirsner, J. B., and Palmer, W. L.: Exfoliative cytology of gastrointestinal tract. In: Modern Trends in Gastroenterology, Ser. 2, pp. 76-91. New York, Paul B. Hoeber, Inc., 1958.
20. Raskin, H. F., and Pleticka, S.: Exfoliative cytology of stomach. Cancer, **10**:82-89, (May-June) 1960.
21. Proper, R.: Acridine orange fluorescent staining of gastric cytological elements. Bull. Gastroint. Endos., **9**:7-10, (Nov.) 1962.
22. Grubb, C., and Crabbe, J. G.: Fluorescence microscopy in exfoliative cytology. Brit. J. Cancer, **15**:483-488, (Sept.) 1961.
23. Kim, Young S., and Plant, Andrew G.: Beta Glucuronidase Studies in Gastric Secretions from Patients with Gastric Cancer. (Paper presented at 65th annual meeting, American Gastroenterological Association, Dallas, April 24, 1964.)

The Etiology and Management of Epistaxis

LESLIE BERNSTEIN, M.D., D.D.S.
Iowa City

WITH THE EXCEPTION of the uterus, the nasal cavity is probably the commonest anatomical site of spontaneous bleeding. Apart from the prominence and susceptibility of the nose to external trauma, and the exposure of its interior to digital and to dry thermal insults, a very important factor underlying most cases of epistaxis is the existence of an extensive vascular network which is contained mostly within a thin mucoperiosteum and mucoperichondrium. As a result, there is very little cushioning or protection provided for the vessels, and once damaged, the vessels are precluded from efficient contraction.

Although rather rare in infancy, epistaxis increases in frequency from the third year until it reaches its maximum during puberty. The incidence of nose-bleeding in children is about twice that in adults.[14] Afterwards it is more rarely met with, until later on in life when its occurrence is a more serious symptom in association with hypertension. On the whole, it seems to occur more frequently in males.

ANATOMICAL CONSIDERATIONS

The external carotid artery furnishes the entire blood supply of the nose except for the upper part, which derives its supply from the internal carotid artery (Figure 1) by way of the anterior and posterior ethmoidal arteries (branches of the ophthalmic artery).

The *sphenopalatine* artery is a terminal branch of the maxillary artery that arises from the external carotid artery at the level of the neck of the mandible and crosses medially, behind the maxillary sinus, to emerge through the sphenopalatine foramen and immediately to divide into two main branches. The *medial* branch of the sphenopalatine artery passes transversely across the lower part of the anterior wall of the sphenoid sinus to reach

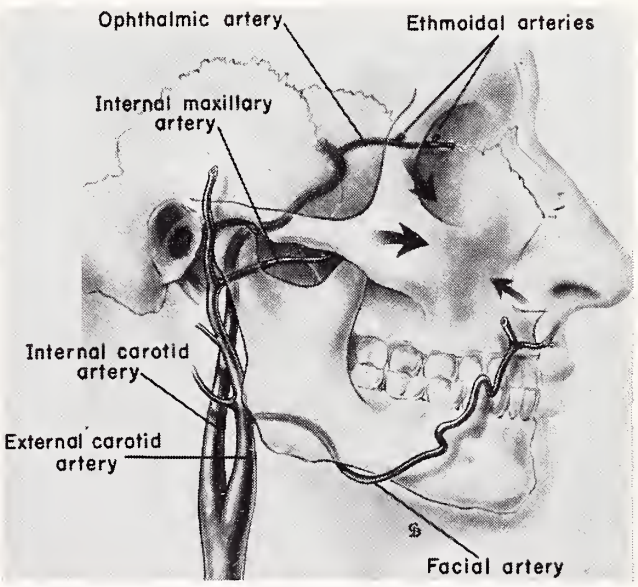


Figure 1. Derivation of the blood supply of the nasal cavities.

Dr. Bernstein is an assistant professor in the Department of Otolaryngology and Maxillofacial Surgery at the U. of I. College of Medicine. This paper is based on a presentation he made at "A Program in Otolaryngology for the General Practitioner" in Iowa City, November 16, 1963.

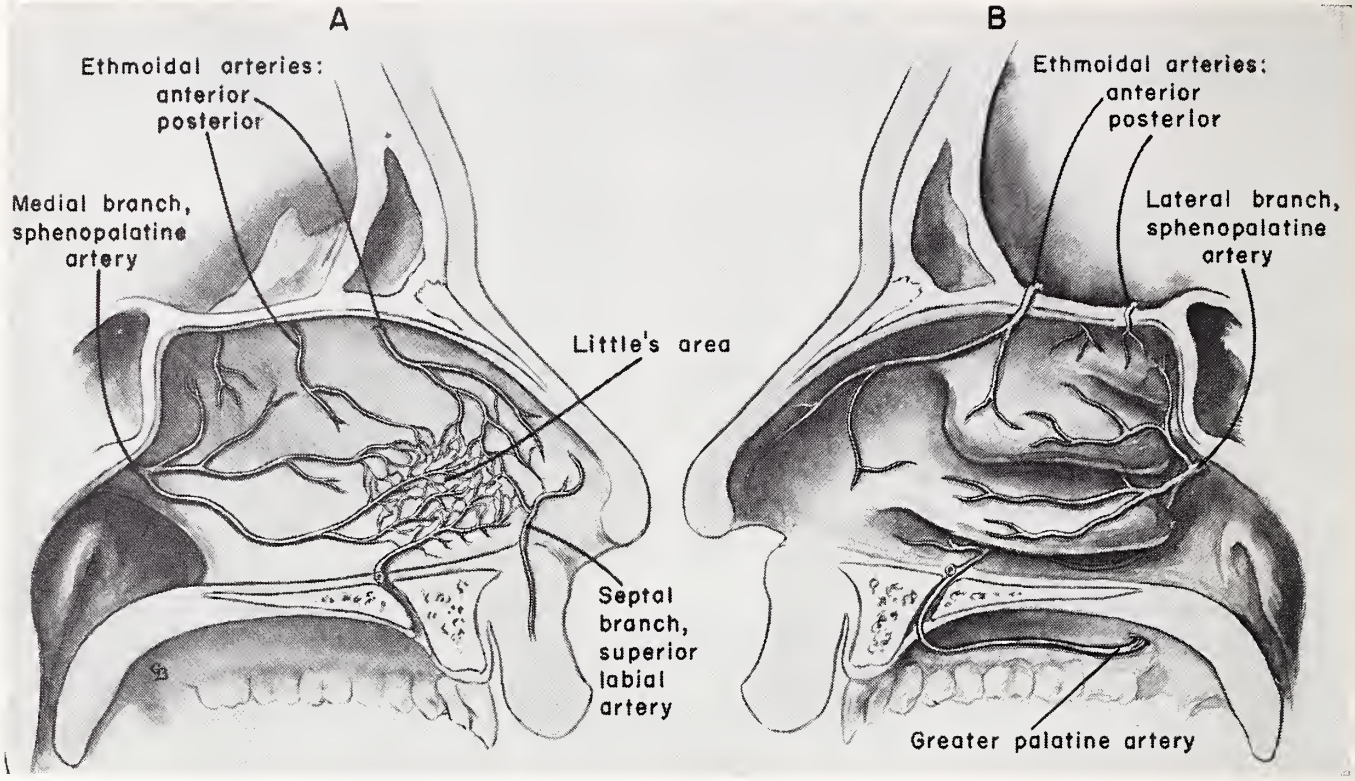


Figure 2. Diagrammatic representation of the blood supply to: A. the right side of the nasal septum; and B. the lateral wall of the right nasal cavity.

the septum (Figure 2A), where it passes forward and downward, giving off numerous branches. These divide to form a profuse network in the mucosa of the septum, finally anastomosing with the anterior palatine artery as the latter ascends from the mouth through the incisive foramen. The *lateral* branch of the sphenopalatine artery ramifies downward and forward over the lateral wall and floor of the nasal fossa (Figure 2B), forming a profuse plexus particularly beneath the mucous membrane of the turbinates.

The *descending palatine* branch of the maxillary artery passes down the greater palatine canal, and within the canal it divides into a larger anterior branch and several smaller posterior branches. The greater palatine branch emerges from its foramen and passes forward under the mucosa of the palate, curving medially to ascend up the anterior palatine foramen into the incisive canal. It emerges in the nasal cavity on the ipsilateral side of the septum, and anastomoses with the sphenopalatine artery.

The *septal branch* of the superior labial artery (a branch of the facial artery) ascends from the upper lip (Figure 2A) into the anterior naris, to be distributed to the anterior part of the septum and the front of the floor of the nose.

The *anterior* and *posterior ethmoidal* vessels leave the ophthalmic artery within the orbit and enter their respective canals in the ethmoid bone, experience a short intracranial course, and then enter the roof of the nasal cavity at the lateral border of the cribriform plate. These arteries are distributed largely to the dome of the nasal fossa, as well as to the anterior third of the nasal wall and septum (Figure 2, A and B).

The commonest site of hemorrhage from the nose is the so-called "Little's area" (Figure 2A) on the anterior portion of the cartilaginous septum. This is situated about half an inch within the vestibule and about a quarter of an inch above the floor of the nose. In this region the mucous membrane overlying the quadrilateral septal cartilage is very thin, and running in it are little vessels which form the anastomoses of the septal branches described above. This area (sometimes also referred to as Kiesselbach's area or plexus, although it was first described by James L. Little[6]), is often marked by a varicose mesh of vessels. Just inside the vestibule, the superior labial artery branch is frequently seen to lie very superficially as it courses from the floor of the nose to the septum, to participate in this anastomosis.

Apart from Little's area, which is by far the commonest source of epistaxis in children and young adults, other important regions, particularly in the older adult, are directly related to the vessels of the nose. Thus, lateral branches of the sphenopalatine artery may be involved, especially along the inferior meatus of the nose. Similarly, the anterior ethmoidal artery often bleeds high up between the anterior attachment of the middle turbinate and the septum (Figure 2B).

THE ETIOLOGY OF EPISTAXIS

Although well over 90 per cent of nasal bleeding is due to local vascular conditions,[12] systemic factors may also play a very important primary or secondary role in its causation. For this very important reason, frank bleeding from the nose—or blood-stained nasal discharge—should always be considered a symptom rather than a disease.

Local Causes

1. *Trauma.* This is probably the commonest factor in the young age group, and may be external, as from a blow or a fall with or without fracture of the nasal skeleton, of the septum or of the maxillary sinus (Figure 3). Epistaxis may follow internal trauma such as nose-picking, and may be induced by nose-blowing, violent sneezing, or various surgical procedures. Unilateral epistaxis in a child under three years of age, particularly if the bleeding alternates with a homolateral purulent discharge, should always raise the suspicion of a self-inserted foreign body. The same causation may be suspected in an adult, especially if feeble-minded, although malignancy may mimic this presentation. A rhinolith or nasal calculus may also present with similar symptoms.

2. *Inflammations.* Bleeding may originate from lesions in the floor of the nasal vestibule, and may follow the removal of scabs from fissures or from impetigo of the vestibular skin.

Acute rhinitis—viral or bacterial—may lead to congestion of blood vessels, ulceration or membrane formation, which in turn may lead to epistaxis. Diphtheritic rhinitis may occasionally produce a blood-stained discharge or frank epistaxis. Acute glanders,[4] a rare infection with Malleomyces mallei contracted in handling diseased horses, may be accompanied by a blood-stained discharge from the nose, especially in rural areas. Acute adenoiditis has been cited as an occasional cause of epistaxis in young children.[11]

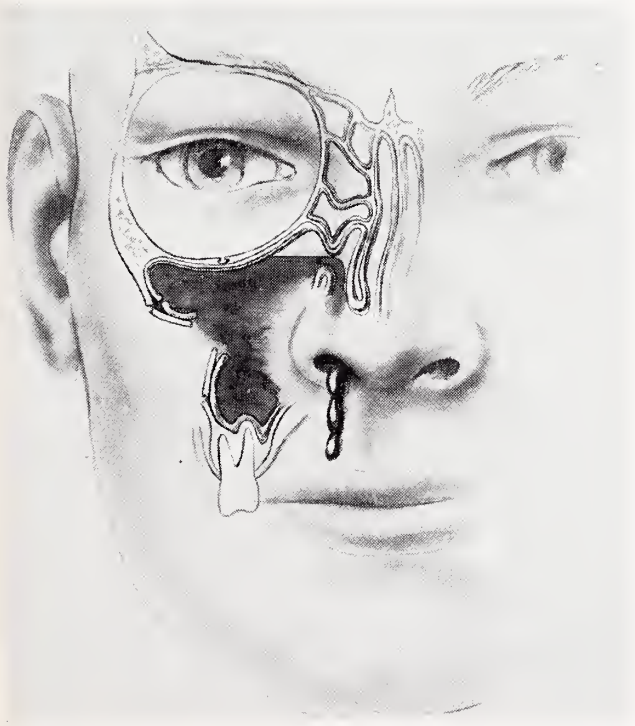


Figure 3. Fracture of the wall of the maxillary sinus may lead to epistaxis.

Epistaxis often accompanies the chronic varieties of rhinitis, particularly those which are characterized by a crusting of the secretions, such as atrophic rhinitis (ozena) and rhinitis sicca, as well as in the following less common conditions: lupus—slight epistaxis due to separation of crusts; sarcoidosis—minute yellowish-white nodules surrounded by a zone of hyperemia; syphilis—in the gumma stage, due to separation of scabs, and in yaws; leprosy—in its early stages, marked by chronic coryza followed by episodes of epistaxis.

In the above chronic conditions, and in others, a foul discharge may attract flies and other parasitic infestations. This is particularly true in backward tropical regions. Thus one may encounter maggotts, screw worms (Cochliomyia macellaria), leeches and even intestinal worms.

3. *Chemical Irritants.* Patients working in chemical plants may develop epistaxis due to the caustic action of such substances as phosphorus, chromic acid and its salts, nitric and sulfuric acids, cyanides and irritating gases such as ammonia. Printers and car mechanics may be similarly involved.

4. *Neoplasms.* Certain simple tumors are notorious causes of epistaxis, in particular angioma ("bleeding polyp") of the nasal septum, and juvenile angiofibroma.

Malignancy of the nose and paranasal sinuses may make its earliest presentation by an episode of frank epistaxis or by a blood-stained nasal discharge.

5. *Miscellaneous.* The artificial drying of the nasal membranes, due to overheating of the home and inadequate replacement of humidity, is an increasingly common cause of epistaxis in winter, especially in elderly patients. This is all the more pronounced in the presence of septal abnormalities such as deflections, spurs or perforations. As a result of the excessive dryness, there is an increase in the formation of crusts which, when picked or blown away, produce tears in the delicate mucous membrane to which they have adhered, with resultant bleeding.

Hereditary multiple telangiectasis (Osler's or Babbington's disease) is a rare ailment characterized by angiomas of varying distribution and number, with a marked tendency to bleed spontaneously or from minimal trauma. Epistaxis is a most frequent and distressing symptom of this condition, particularly during the fourth decade of life.[2, 10]

Systemic Causes

Systemic conditions frequently precipitate or promote the local causes of nose-bleeding. Febrile states, increases in arterial and venous pressures, bleeding diatheses, and the absorption of certain toxic substances are some of the general conditions of which epistaxis can be a complication.

1. *Acute Illnesses.* The combination of toxicity and vascular congestion which accompanies certain acute infections often leads to epistaxis. Nasal hemorrhage may thus be a prodrome of measles, varicella (chickenpox), typhus, scarlet fever and erysipelas; or it may occur early in infections such as variola (smallpox), typhoid fever, influenza and diphtheria (when no diphtheritic process is as yet visible in the nose).

In addition, nasal hemorrhage may occur in infectious mononucleosis, it is not uncommon in pertussis (whooping cough), and it occurs frequently in children with rheumatic fever. It may also be met with in lobar pneumonia, measles, scarlet fever, malaria, dengue and relapsing fever.

2. *Hypertension and Vascular Congestion.* Hypertension of whatever etiology is an important cause of epistaxis, particularly in the elderly patient. Similarly, a rise in the venous pressure—such as is met with in mitral stenosis, emphysema, bronchitis, whooping cough, pneumonia, mediastinal masses, thoracic aneurysm and neck tumor—frequently leads to nasal bleeding. Violent exertion or excitement, barotrauma (caisson disease, rapid ascent in a poorly compressed airplane, mountain climbing) and extremes of heat and cold may produce frank epistaxis due to vascular congestion.

3. *Blood Conditions.* Bleeding diatheses which alter the clotting and bleeding times naturally predispose to epistaxis and promote its occurrence. The following conditions fall into this category: disorders of the platelets; abnormalities of coagulation factors in the plasma such as deficiency of prothrombin activators (hemophilia, Christmas disease) or of prothrombin itself; hypofibrinogenemia; excessive fibrinolysis (as in prostatic carcinoma); heparin; hepatic disease; hypovitaminosis-K; and disorders of the capillaries (scurvy, Osler's disease, vascular hemophilia, allergic purpura). Mention should also be made here of the toxicity of various drugs which may lead to depression of the bone marrow.

4. *Miscellaneous.* Vicarious menstruation may accompany menses or herald the menarche.

One should add a further idiopathic group of spontaneous epistaxis where there is no history of predisposing factors such as trauma; no obvious clinical abnormality such as hypertension; and no blood dyscrasia. In the author's experience, this group constitutes a rather large proportion of patients with epistaxis.

MANAGEMENT OF EPISTAXIS

Our general approach to a case of epistaxis is first to stop frank bleeding and replace lost blood. Once the patient is safe, one should investigate the cause, and treat it whenever possible.

General Management

Lost blood, if appreciable, should be replaced with whole blood when available and as soon as possible. Once the source of bleeding has been brought under some measure of control, an intravenous saline transfusion is set up, and the patient's blood type is matched. When blood is not available, plasma or plasma substitutes should be administered.

After taking a careful history, with particular reference to bleeding from other sites, and similar episodes in other members of the patient's family, one should subject the patient to a full physical examination. Unless the epistaxis has been small, it is wise to admit the patient to the hospital for proper nursing care. His pulse and blood pressure should be recorded every two hours for the first 24 hours, and every four hours thereafter until at least 24 hours after the last sign of hemorrhage, when routine orders may be instituted. The hemoglobin should be rechecked on the following day after hemodilution has taken place. Patients who have lost substantial amounts of blood tend to become irritable, and this is particularly true of those with hypertension. Sedation with a suitable barbiturate, such as phenobarbital gr. ½-1 every six hours, may therefore be indicated.

Arrest of Hemorrhage

As a general rule, simple methods of stopping the bleeding should always be attempted first, for the more heroic methods require practice, skill and additional equipment. Excessive and rough intranasal manipulation should be avoided, for it tends to damage the delicate cilia of the respiratory epithelium that lines the nasal membranes. However, much depends on the experience, judgment and skill of the physician.

If possible, the patient should be treated in a sitting position, for this lowers the vascular pressure in the head. One should tilt his head slightly forward so that the escaping blood may be seen, in order to gain an idea of the severity of the hemorrhage and to prevent the patient from swallowing the blood. If the blood flows equally from both sides, one should suspect that there has been an injury to the base of the skull, or that the bleeding may come from the pharynx, as may occur with an angiofibroma.

The physician is seated opposite the patient, and both are draped, since frequently the patient tends to spit the blood out of his mouth, or may cough or sneeze while his nose is being treated. A good headlight or head reflector is essential for good visibility, and it also frees both hands for instrumentation. An efficient suction apparatus with a suitably angled tip, such as Frazier's, is desirable for removing blood clots from the nose. If no suction is available, the patient is asked to clear his nose by blowing into a piece of gauze. The nose

may now be sprayed with a weak solution of cocaine (1-5 per cent) which, acting as a vasoconstrictor, will shrink the nasal membranes to facilitate inspection of the cavity, and in many instances will stop or slow down the bleeding. Also, it will anesthetize the membranes to facilitate subsequent manipulation. In instances of allergy to cocaine, a mixture of equal parts of Dyclone 0.5 per cent (or Xylocaine 4 per cent) and phenylephrine 0.25 per cent may be substituted. The nose is then cleaned out with the suction tip, and the source of bleeding is looked for.

Anterior Epistaxis. Bleeding from the anterior part of the nose is much easier and simpler to control than is bleeding from the posterior part, and fortunately it is far more common. It invariably originates in the cartilaginous vault of the nose, which can be compressed from without, and usually can be treated under direct vision.

Having spotted the bleeding point, it is a simple matter for the physician to make a cotton wad the size of the distal phalanx of the patient's little finger, to soak it in a weak vasoconstrictor solution, and having squeezed out the excess, to place the cotton wad in the naris over the bleeding area and ask the patient to compress his nose between his thumb and forefinger. The oropharynx is then inspected to see whether there is any posterior bleeding. About 10 minutes later, the cotton swab is gently removed, and the nose is examined to see whether the bleeding has stopped. It may be wise at this stage to place a small square of compressed gelatin sponge (Gelfoam) over the bleeding point and to reinsert the cotton wad until the following day. Then the cotton is removed, but the Gelfoam should be left to come away on its own.

Chemical cautery is not encouraged because it is likely to damage the delicate ciliary epithelium and because it is quite useless in the presence of active bleeding. However, during quiescence one may resort to it in an effort to prevent further bleeding, and silver nitrate solution 25-50 per cent, or trichloracetic acid 50 per cent may be used. The patient should be forewarned that the cauterizing may produce a bout of sneezing, and that sneezing should be done with the mouth open so as to avoid a recurrence of the epistaxis. Indiscriminate application of a caustic agent must be avoided because cautery produces areas of ulceration which may cause further bleeding. Chemical cautery is not effective if the abnormal vessels are numerous or if they are varicose. To apply the

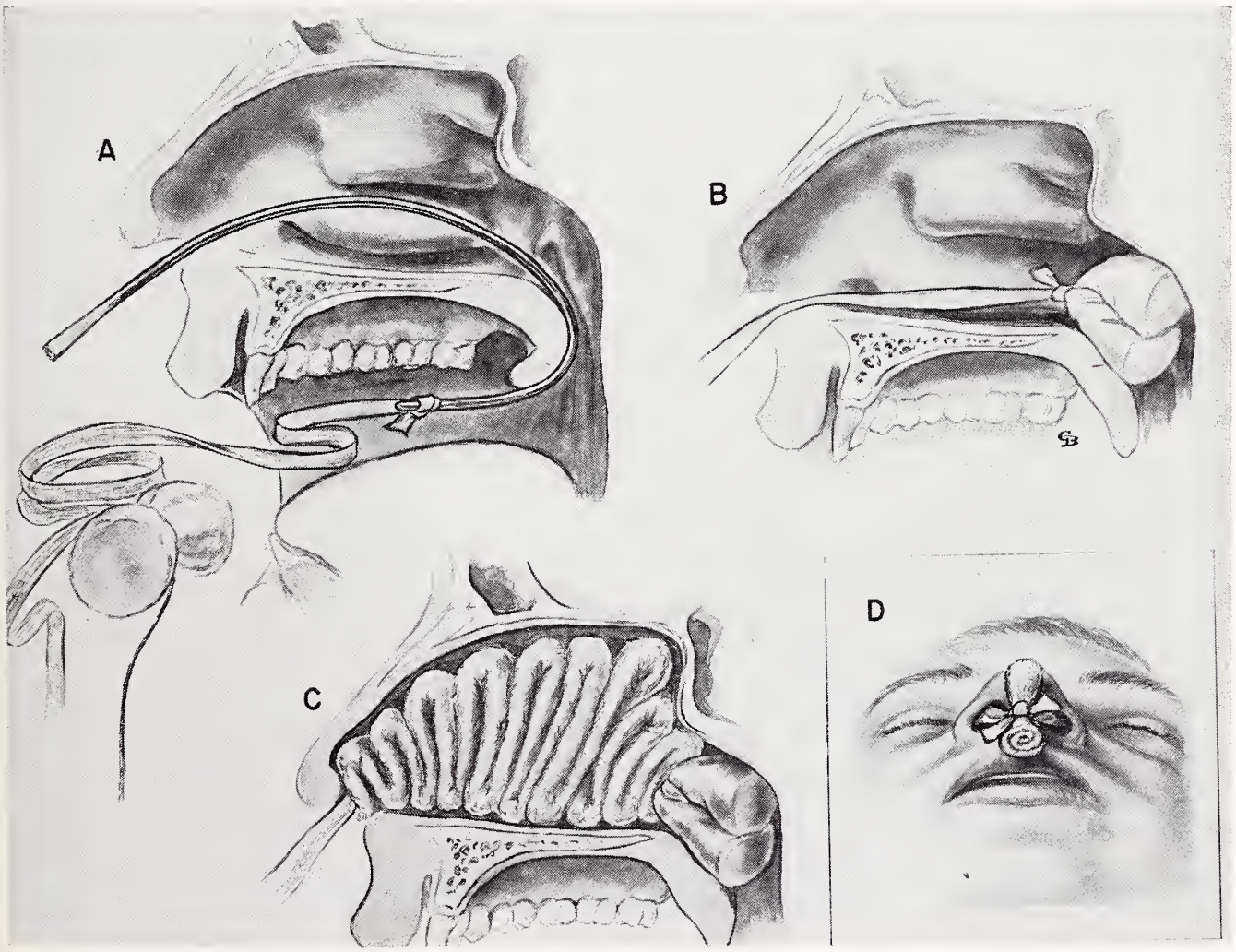


Figure 4. Insertion of a postnasal pack.

liquid caustic, one should roll a small wisp of cotton tightly round the serrated tip of a fine metal applicator, and after lightly dipping it in the solution, apply it gently and with precision to the ulcerated spot that marks the site of the arrested bleeding.

Weak electrocoagulation may be safe in experienced hands, but we certainly frown upon heat cautery, for there have been perforations of the septum as consequences of its improper use. One may use a diathermy coagulator attached to a small-gauge suction tip which has been insulated except at its end. When the exact bleeding point has been discovered by suctioning, one introduces the current by stepping on the foot control. The finer the suction tip, the less the possible damage to the epithelium.

Where the above approach fails, a firm pack may have to be placed. Calgitex alginate ribbon gauze is ideal for this purpose. Half-inch ribbon gauze, lightly lubricated with petrolatum jelly, is also rather useful.

At times, in addition to the above, it has been necessary to inject a local anesthetic with a vasoconstrictor below the mucoperichondrium (or mucoperiosteum) to obtain hemostasis, and on rare occasions it may be necessary to elevate the mucosa off the septum in severe recurrent cases.

Posterior Epistaxis. In posterior hemorrhages, the exact bleeding point is outside the direct line of vision. Nevertheless, in many instances one can estimate the site of bleeding with a fair degree of accuracy. Once the nose has been shrunk and anesthetized, an angled suction tip is advanced into the nose to suck up clots and fresh blood. An area will be reached where the epistaxis appears to be under control, and if the suction tip is advanced further, the bleeding recurs. This region must obviously be the site of bleeding, and as mentioned above, the most likely place is the floor of the nose under cover of the inferior turbinate. One can control this by inserting a wad of cotton soaked in a vasoconstrictor solution (phenylephrine 0.25 per cent, or ephedrine 0.5-1.0 per cent) under the inferior turbinate. If this does not control it, one can pack the nose with half-inch ribbon gauze, taking care to anchor the pack in the spheno-ethmoidal recess to prevent it from slipping down into the pharynx. A nasal pack should always be built up gradually from back to front in a zig-zag fashion, so as to produce even and regular pressure, and to facilitate easy, gentle removal (Figure 4C).

At this stage, it should be pointed out that a great majority of nasal hemorrhages can be controlled by the above-described methods.

Difficult cases that do not respond to these methods may require postnasal packs. The technic is as follows. A tampon is made to fit into the choana. This, when wet and compressed, should be about 1 x ½ x ½ in., and can be made of rolled gauze, a vaginal tampon, or lamb's wool, which is excellent. If both choanae are to be packed, the tampon should measure about 1 x 1¼ x ½ in. A half-inch gauze tape is securely tied around the middle of the tampon, and the two free ends should measure about 10-12 in. In addition to the tapes, a strong string, about eight inches long, is tied onto the middle of the tampon (Figure 4A). When possible, the nose and the oropharynx are first sprayed with an anesthetic solution. A thin rubber catheter is then passed back along the floor of the nose until it presents at the oropharynx. There, it is grasped with forceps, and this end is brought out through the mouth while the nasal end of the catheter is held by a clamp. One of the tapes is tied onto the oral end of the catheter, and by pulling on the nasal end, one can draw the tape up into the nasopharynx and out

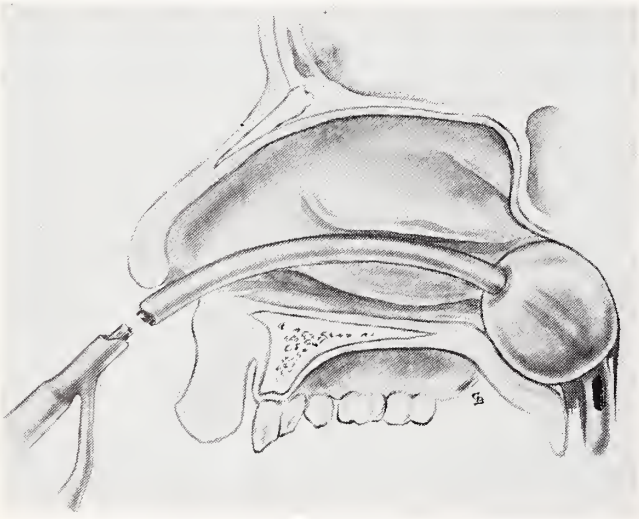


Figure 5. An inflated Foley catheter may replace the postnasal pack—desirable in children.

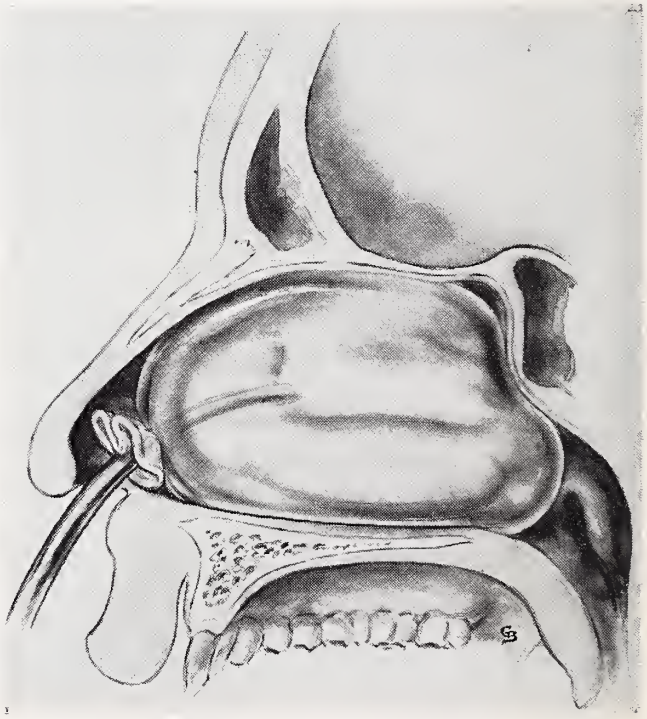


Figure 6. An inflatable nasal tampon made by fixing a latex finger-cot over a rubber catheter.

of the anterior naris. This procedure is repeated on the other side of the nose to bring the other tape out on the other side of the nasal septum. If one pulls both tapes simultaneously, the tampon is delivered into the mouth, and with the help of the physician's index finger, can be tucked up behind the soft palate. If only one side is to be packed, the tape on that side is pulled firmer, to seat the tampon in its respective choana (Figure 4B). After the tampon has been put in place, the nasal cavity is packed with half-inch ribbon gauze. The tapes are then tied over a gauze bolster placed over the columella, and the packed naris is taped over to prevent the pack from coming out. The string, which is hanging in the mouth from the tampon, is cut off about two inches below the level of the palate. It is used for withdrawing the postnasal pack.

The anterior ribbon-gauze packing should be removed after 24 hours. If for any reason this pack has to be kept in longer, one should watch the patient for evidence of sepsis, bearing in mind that the packing has led to occlusion of the ostia of the paranasal sinuses as well as of the auditory (eustachian) tube. The tympanic membranes should be watched for the development of otitis media.

If both nasal cavities have been packed, humidification of the patient's room should be increased, and a soft or liquid diet should be prescribed to facilitate swallowing. Sedation may be required, since the packs may be rather uncomfortable.

In children, as for example after adenoidectomy, one can control bleeding from the nasopharynx by inserting a Foley catheter and inflating it, once it is in place (Figure 5). This is an easy and highly commended method.

To control the frequent bleeding in Osler's telangiectasis, we sometimes provide the patient with an inflatable nasal tampon made of a fingercot glued onto the lower end of a rubber catheter (Figure 6). After lubricating the tampon with liquid petrolatum, the patient inserts it into his nose, inflates it by means of the free end of the catheter, and then clamps it. The tampon is removed after 20-30 minutes, and may be reapplied if necessary. More sophisticated commercial models are available.[9]

Ligation of Vessels

Occasionally all of the above methods, in conjunction with blood replacement, fail to control an epistaxis. In those instances one may have to resort to ligation of arteries such as the ethmoid, the maxillary or the external carotid. These vessels may be tied under local or general anesthesia, and it

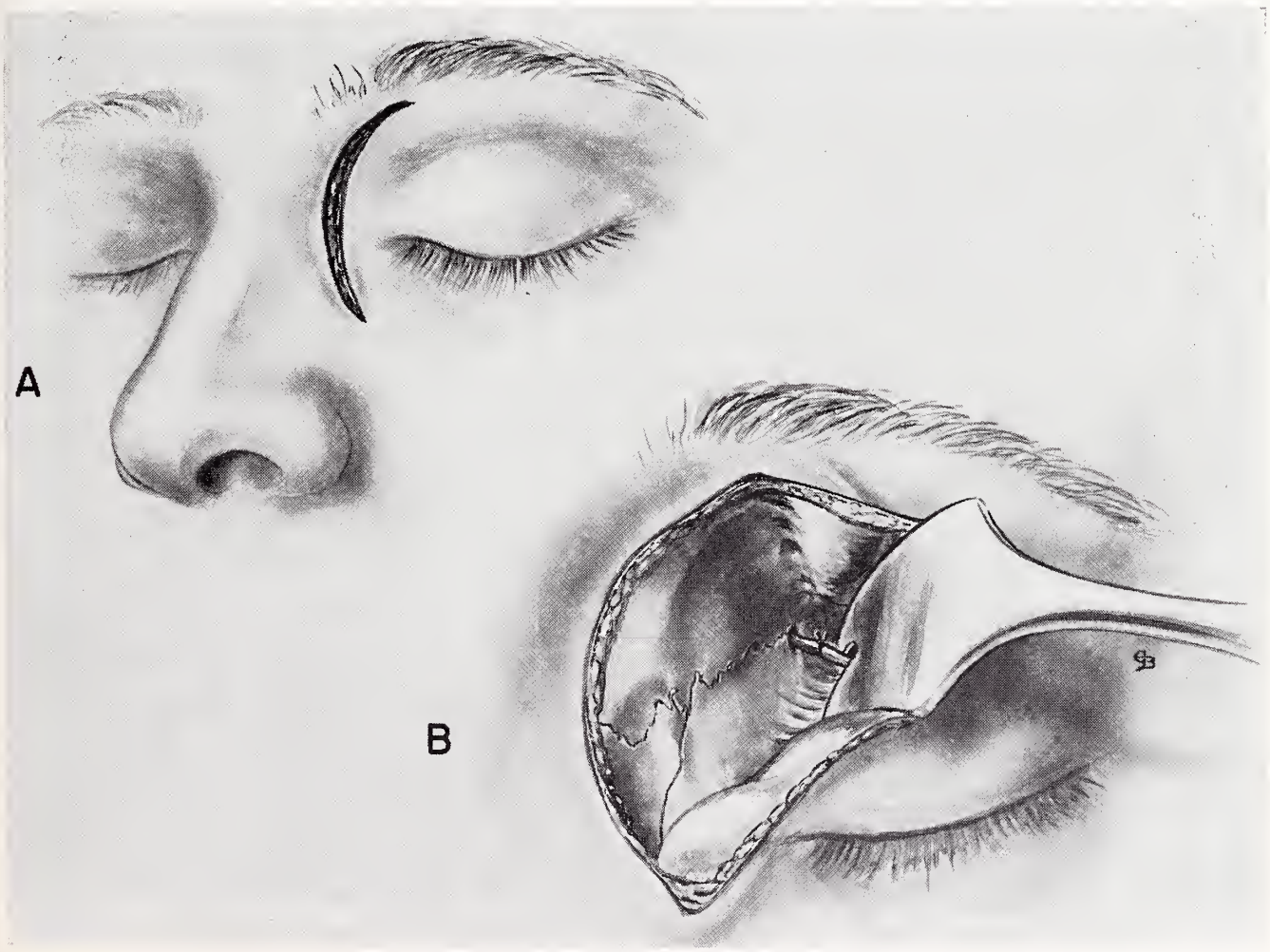


Figure 7. Ligation of the anterior ethmoidal artery.

should be pointed out that this should be done only when everything else has failed, or if the patient has frequent and severe nasal hemorrhages.

Although ligation of the external carotid artery is by far the easiest to perform, and though it does reduce the flow to some extent, it does not as a rule stop the bleeding.[1, 8, 13] This is mainly due to the extensive anastomosis with the opposite side as well as with the internal carotid system via the ethmoidal vessels. Ligation of a bleeding vessel is more efficacious if it is done near the bleeding point, and for this reason it is preferable to ligate the ethmoidal or the maxillary arteries, or both.

The ethmoidal artery may be ligated in cases of anterior hemorrhages on the lateral wall of the nose near the anterior attachment of the middle turbinate.[1, 13] From the anterior part of the eyebrow, a curved incision is made down to the periosteum, following a course midway between the medial canthus of the eye and the dorsum of the nose (Figure 7). The orbital periosteum is elevated laterally, and the articulation between the ethmoid and the frontal bones is identified. Along this line, about one inch posteriorly, the vessel will be found. It is either ligated with silk or clamped with a metal clip.

One can find the maxillary artery in the pterygomaxillary space by entering the antrum through a Caldwell-Luc antrostomy[3] and gently breaking through the posterior wall of the maxillary sinus (Figure 8). There, the vessel is identified and ligated.

The external carotid artery is approached through a horizontal incision in the neck just above the level of the common carotid bifurcation. The external carotid is identified by its branches (Figure 9), and the vessel is ligated above the origin of its superior thyroid branch.

TREATING THE CAUSE OF EPISTAXIS

Once the patient is in the recovery phase, investigations are directed towards establishing whether or not there is an underlying cause for the epistaxis.

Local Causes

Most of the local causes of epistaxis will have been taken care of by the time the bleeding episode has been stopped. In cases of fracture of the nasal bones, with displacement, reduction of the fragments and packing of the nose will have to be done. Where a deviated nasal septum or a prominent anterior spur is regarded as a contributing cause, a submucous resection or a septal reconstruction may be done at a later time. Prophylactically, the patient should be instructed not to

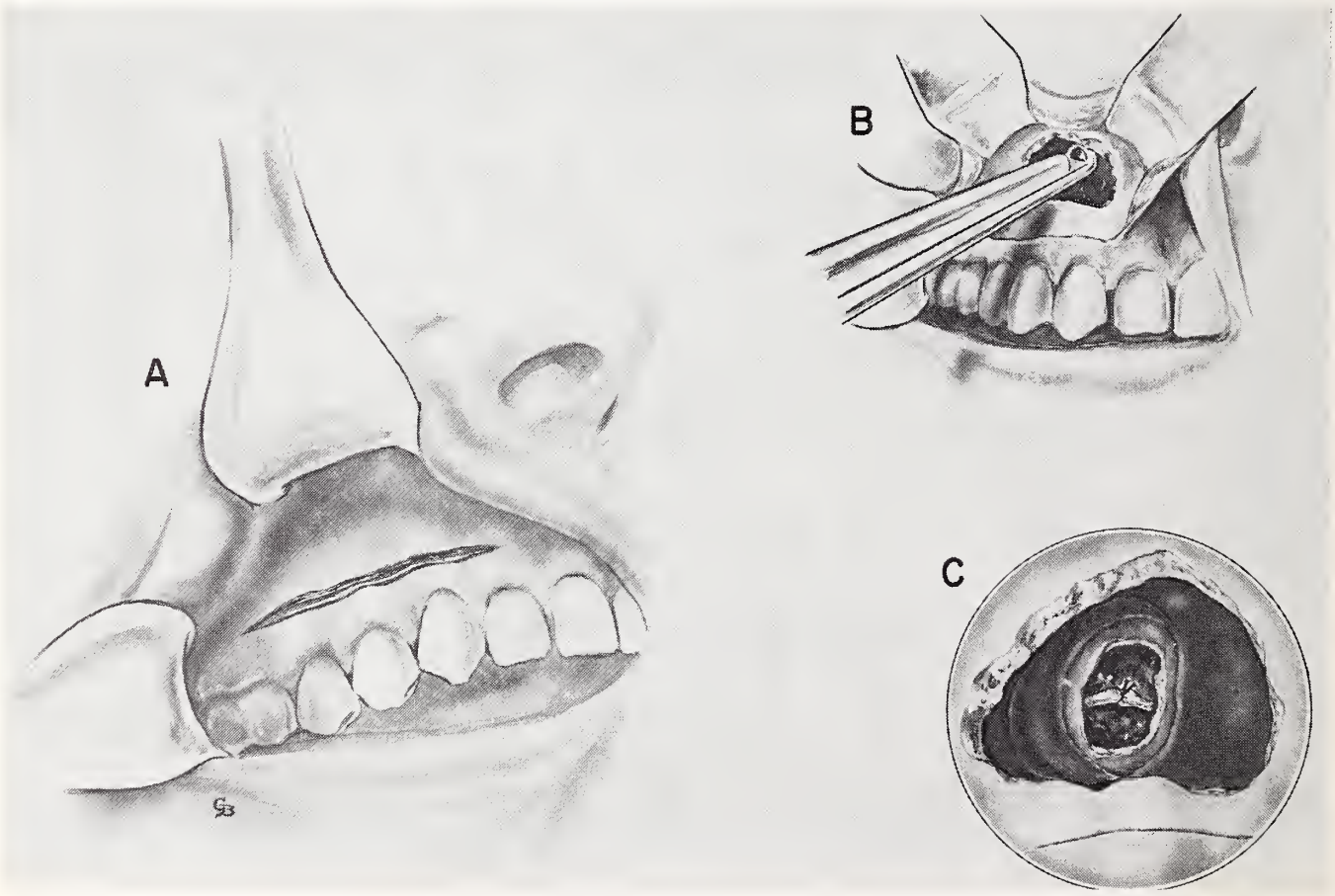


Figure 8. Ligation of the maxillary artery. A. incision; B. entering the maxillary sinus through the canine fossa; C. the posterior wall has been opened and the vessel ligated.

pick his nose, and to use propylene glycol, 25 per cent in normal saline, as a spray to soften and loosen nasal crusts. Blowing the nose should be discouraged, and when attempted it must be done gently, one side at a time. One should stress the need for adequate humidification in centrally-heated rooms. If a septal perforation is the cause of the epistaxis, it may be repaired, provided that it is not too big. One can treat hereditary hemorrhagic telangiectasis surgically by stripping the mucous membrane of the septum. A bleeding polyp is best removed by means of a localized submucous resection around its base, and a juvenile angiofibroma can be extirpated.

Systemic Causes

There is too ready a tendency to blame blood dyscrasias for epistaxis. Though this does occur, it is nevertheless an infrequent cause of epistaxis. In addition to complete routine blood studies, however, unless the cause of the epistaxis is obvious, one always performs tests for prolonged bleeding and clotting times; a capillary fragility test; platelet estimations; and prothrombin times. If any one of these is abnormal, more extensive studies are indicated. Generally, treatment is directed toward the correction of specific clotting defects.

The hypertensive patient should be assessed carefully, over a three- or four-day period, by means of blood pressures every four hours, both recumbent and standing. The pulses in his legs should be carefully tested. Radiographs of the chest, an electrocardiogram and an intravenous pyelogram should be done. Other studies which may be useful are a two-hour postprandial blood sugar, and measurements of serum cholesterol and potassium, and of catecholamines in the urine. Such patients can be made well, but they require continuous treatment and care.

Success has been reported[5, 7] in treating spontaneous epistaxis with intravenous injection of sodium estrone sulfate (Premarin). One 20 mg. dose usually suffices to control the bleeding within an hour or two. Estrogen therapy has also been of value in the treatment of epistaxis from Osler's telangiectases.[2]

SUMMARY

The blood supply of the nasal cavity has been described, and various local and systemic causes of epistaxis have been discussed. Some of the rarer

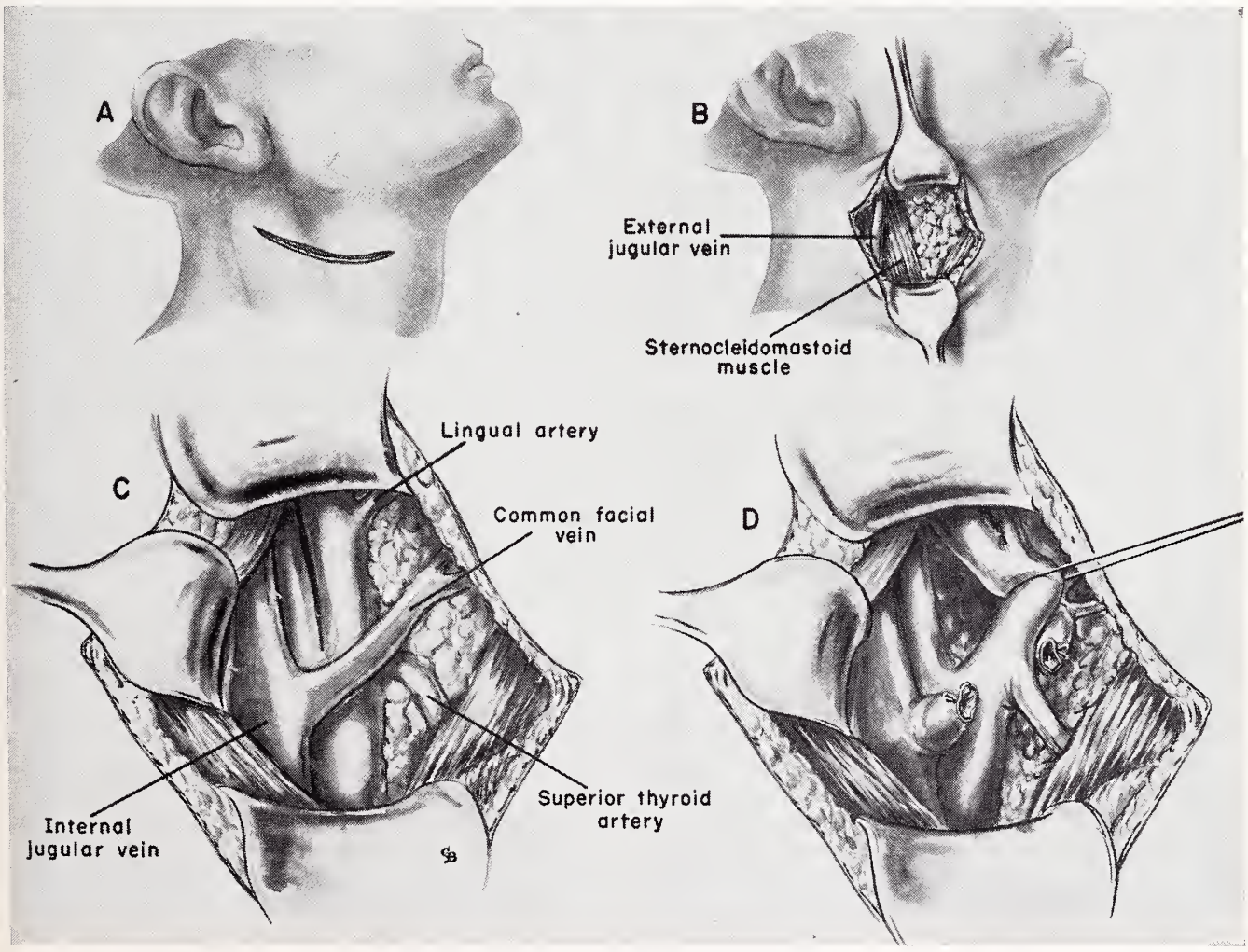


Figure 9. Ligation of the external carotid artery.

causes of nasal hemorrhage have been enumerated. An outline of management has been given, ranging from mild epistaxis requiring the local application of a vasoconstrictor, to the very severe type necessitating ligation of major vessels leading to the nasal cavity. Stress has been laid on the hypothesis that epistaxis should be regarded as a symptom until systemic causes can be ruled out.

REFERENCES

1. Fitz-Hugh, G. S., and Risher, J. C.: Epistaxis: report of case of ligation of external carotid and anterior ethmoid arteries. Arch. Otolaryng., **49**:564-565, (May) 1949.
2. Harrison, D. F. N.: Familial haemorrhagic telangiectases. J. Laryngol. & Otol., **71**:577-596, (Sept.) 1957.
3. Hirsch, C.: Ligation of internal maxillary artery in patients with nasal hemorrhage. Arch. Otolaryng., **24**:589-593, (Nov.) 1936.
4. Howe, C., and Miller, W. R.: Human glanders; report of six cases. Ann. Int. Med., **26**:93-115, (Jan.) 1947.
5. Jacobson, P.: Spontaneous hemorrhage: clinical entity, with special reference to epistaxis. Arch. Otolaryng., **59**:523-530, (May) 1954.
6. Little, J. L.: Hitherto undescribed lesion as cause of epistaxis; with four cases. Hosp. Gazette, **6**:5-6, (Mar.) 1879.
7. Menger, H. C.: Estrogen given parenterally to control epistaxis and hemorrhage after adenoidectomy; preliminary report. J.A.M.A., **159**:546-548, (Oct. 8) 1955.
8. Spar, A. A., and Hallberg, O. E.: Severe epistaxis and its management; report of 11 cases in which external carotid artery was ligated. Ann. Otol., Rhinol. & Laryng., **56**:141-151, (Mar.) 1947.
9. Stevens, R. W.: Nasal packing; rubber pneumatic pack. Arch. Otolaryng., **54**:191-194, (Aug.) 1951.
10. Stock, M. F.: Hereditary hemorrhagic telangiectasia (Osler's disease); review of literature and report of cases. Arch. Otolaryng., **40**:108-114, (Aug.) 1944.
11. Thomson, St. Clair: Diseases of the Nose and Throat, Sixth Edition. London, Cassell & Co., Ltd., 1955.
12. Trible, G. B.: Epistaxis of antral origin. Arch. Otolaryng., **10**:633-635, (Dec.) 1929.
13. Weddell, G., Macbeth, R. G., Sharp, H. S., and Calvert, C. A.: Surgical treatment of severe epistaxis in relation to ethmoidal arteries. Brit. J. Surg., **33**:387-392, (Apr.) 1946.
14. Wilson, T. G.: Diseases of the Ear, Nose and Throat in Children, Second Edition. New York, Grune & Stratton, Inc., 1962.

Mononucleosis in the Aged

ROY W. OVERTON, M.D., and
WILLIAM SHUTZE, M.D.
Des Moines

FOLLOWING IS THE case history of a 64-year-old patient with infectious mononucleosis who was followed in the office and at Mercy Hospital, Des Moines, about a year ago. The rarity of infectious mononucleosis among elderly people justifies presenting her case and summarizing the published reports of similar instances.

H. G., a 64-year-old woman, was first seen in the office on November 9, 1963, when she had had a fever of 103°F. (oral) for 24 hours. She had complained of increasing fatigue during September and October, and of a feeling of exhaustion. On about November 1, she had had a cold and hoarseness for several days, and on November 8 she had begun to develop fever and "chilly sensations." During the final 10 days in the month of October, she had made a trip with a large group of women through Colorado, and though she had tired easily, she had had no other unnatural symptoms.

Examination revealed a well-developed, thin, elderly female, with hot, dry skin. Her posterior pharynx was injected. Her head revealed no stiffness or adenopathy at that time. The chest was clear to auscultation and percussion. The abdomen was soft, the liver and spleen were not palpable, and there was no clinical edema. A urinalysis was negative for albumin, sugar and pus cells.

It was felt at that time that the patient had an upper-respiratory infection, and she was treated with 600,000 units of Wyeth procaine penicillin G, intramuscularly, and Tetracidin tablets, 2q6hrs. On the following day, she complained of a severe headache and lethargy, and appeared toxic. She was admitted to Mercy Hospital on November 10, for further care.

The patient's medical history was felt to be noncontributory.

Hospital course. On admission, the patient's temperature was 104°F. (oral). Her blood had a hemoglobin of 14.6 Gm., and a microhematocrit of 41 volumes per cent. The total white blood cell count was 5,000/cu. mm., and the differential revealed 49 neutrophils, 48 lymphocytes, 1 eosinophil, 1 basophil and 1 monocyte.

The blood urea nitrogen was 18 mg. per cent, and a presumptive test revealed a titer of 1:56. Guinea-pig absorption was 1:14 on November 12. A urinalysis was normal, and a stool was negative for occult blood.

On November 14, the hemoglobin was 13.3 Gm. per cent, and the microhematocrit was 39 volumes per cent. The total white blood cell count was 7,100/cu. mm., with a differential of 26 neutrophils, 73 lymphocytes, and 1 monocyte. Numerous atypical lymphocytes of the Downey type were identified. Bone marrow was aspirated from the right iliac crest and revealed a marked increase in the lymphocytic series and a mild increase of the monocytic series. These findings were felt to be compatible with infectious mononucleosis.

By November 16, the presumptive test titer had

risen to 1:224, and the guinea-pig absorption to 1:112. Agglutination tests for typhus "O" and "H," paratyphoid "A" and "B," brucellosis and proteus OX 19 were all negative. Urine cultures and blood cultures were non-contributory. The total white blood cell count was 9,250/cu. mm., and the differential count showed 42 neutrophils, 46 lymphocytes and 12 monocytes. Again numerous atypical lymphocytes resembling Downey cells were observed.

On November 18, the alkaline phosphatase analysis of the buffy coat of the peripheral blood was normal. X-ray findings of the chest and facial sinuses were interpreted as normal.

A remittent fever, with afternoon spikes of 102 to 104°F., occurred during the patient's first eight days of hospitalization, but she became gradually less toxic in appearance after her second day of bed rest.

Therapy. On admission, the patient was started on 600,000 units of Duracillin for two injections, and 250 mg. Panalba capsules, 1q6hrs. The latter were discontinued following the negative culture report. On November 19, Celestone was started, one tablet b.i.d., with an improvement in the clinical course.

The patient was discharged to bed rest at home on November 20. While at home, she complained of pain in both tibial areas, which she described as a "deep bone ache." Further studies on November 27 revealed a white blood cell count of 10,400/cu. mm., with a presumptive test of 1:28. On December 11, the pain in the legs was less, the white blood cell count was 4,200, with a differential count of 51 segmentals, 40 lymphocytes, 4 monocytes, 2 eosinophils, 2 basophils and one stab cell. X-rays of both lower legs revealed marked calcification of the arteries.

The patient did very well clinically, and was allowed back at work on January 1, 1964. On January 30, the presumptive test was negative, with a differential of 54 segmented neutrophils, 43 lymphocytes, 1 eosinophil, 1 basophil, 1 monocyte, and numerous atypical cells.

REVIEW OF THE LITERATURE

In 1930, Moir[1] reported an epidemic of glandular fever in an isolated community in the Falkland Islands. There were eight patients between 45 and 65 years of age, and one, a male, 70 years of age. Halcrow[2] reported in 1943 on two older patients —one a female 84 years of age who had no clinical manifestation of the disease, but had a Paul-Bunnell reaction of 1:128 and a mononucleosis of 65 per cent, and the other a 64-year-old female who had no clinical manifestations and a negative Paul-Bunnell reaction, but a typical blood picture and a mononucleosis of 48 per cent. In 1957, Fitz-Hugh[3] presented a well documented case of mononucleosis in a 64-year-old female with a heterophile of 1:2048. A 77-year-old patient was described by Shapiro and Horwitz,[4] who complained of pain in the right hip and had a high fever. Her physical findings included hepatomegaly, but no abnormal glands and no splenomegaly. Her heterophile titer was 1:640. This patient had a persistent monocytosis and some fall in the hemoglobin level which suggested neoplastic disease and erythroblastopenia.

COMMENTS

We have presented a case that we feel is compatible with mononucleosis, in a 64-year-old female. Some features of interest were the presence of pain in the long bones of the legs, the absence of hepatomegaly, splenomegaly and adenopathy, and the presence of pain over the maxillary area. The persistence of the lymphocytosis and Downey cells should lead one to include leukemia in the differential diagnosis of such cases.

REFERENCES

1. Moir, J. I.: Glandular fever in Falkland Islands. British M.J., 2:822-823, (Nov. 15) 1930.
2. Halcrow, A., Owen, L. M., and Rodger, N. O.: Infectious mononucleosis. British M.J. 2:443-447, (Oct. 9) 1943.
3. Fitz-Hugh, T., Jr.: Acute infectious mononucleosis in 64-year-old woman. Blood, 12:398-399, (Apr.) 1957.
4. Shapiro, C. M., and Horwitz, H.: Infectious mononucleosis in aged. Ann. Int. Med., 51:1092-1097, (Nov.) 1959.

Arizona Cancer Seminar

The Arizona Cancer Seminar for doctors is being resumed after an interval of two years. It will be held at the Pioneer Hotel, Tucson, March 17-20. The registration fee will be $10, and the program has been approved for 14 hours of graduate study credit by the American Academy of General Practice. Physicians who would like to combine a late-winter vacation with some medical instruction are asked to note that those who attend this conference will have their afternoons and evenings entirely free.

The faculty is to consist of Dr. Paul E. Boyle, dean of the School of Dentistry, Western Reserve University; Dr. Thomas Carlisle, of Seattle, a past-president of the Society of Nuclear Medicine; Dr. Vincent P. Collins, head of radiology at Baylor University College of Medicine, Houston; Dr. James P. Cooney, vice-president in charge of medical affairs, American Cancer Society; Dr. Emmerich Von Haam, professor of pathology, Ohio State University; Dr. Howard H. Mahorner, New Orleans; Dr. Donald B. Rochlin, assistant professor of surgery, U.C.L.A.; Dr. Robert D. Sullivan, director of cancer research, Lahey Clinic, Boston; Dr. John A. Wall, professor of clinical gynecology, Baylor University; and Dr. Elton Watkins, Jr., of the Lahey Clinic.

For further information, address Mr. Lowell E. Lueptow, executive director, American Cancer Society, Arizona Division, 4700 North Twelfth Street, Phoenix, Arizona 85014.

Munchausen's Syndrome

A Case Report and a Brief Discussion

M. DON GEORGE, M.D.
Cherokee, Iowa, and
J. S. CHEATHAM, M.D.
Chattanooga, Tennessee

In 1951, Asher[1] described a group of patients who were perplexing and difficult to understand. These individuals appeared to be a heterogeneous group of pathological liars, peregrinating "professional patients" and simulators of vague organic syndromes, actuated by obscure motives with strong self-destructive overtones. The appellation "Munchausen's syndrome" was coined for their difficulty. Almost immediately thereafter, additional cases were reported in the British and American medical literature, and several reviews of cases have appeared recently.[2, 3] In one of these reports, Chapman[4] has stated that these are patients "who habitually falsify their history and simulate startling symptoms to accompany a harrowing present illness—all for no apparent reason. These odd patients become 'addicted' to strange behavior patterns which they know will result in hospital admission. They are then subjected to perilous diagnostic and therapeutic procedures from which they seem to derive a peculiar satisfaction."

The present report presents an interesting example of this syndrome. Moreover, this report is utilitarian since this man probably will continue to present himself at hospitals in Iowa, requesting care and treatment.

CASE REPORT

On a pleasant summer evening, a motorist entering the outskirts of Cherokee, Iowa, saw a man lying on the shoulder of the highway and apparently having a convulsion. He immediately communicated this information to the local police, and they hastened to the scene. There, they found a middle-aged and apparently unconscious man suffering repeated convulsions, and they removed him to the emergency room of the local hospital.

The emergency-room physician made a tentative diagnosis of "status epilepticus," and administered an intravenous injection of diphenylhydantoin sodium that terminated the patient's seizures. Physical examination at the time was not remarkable, except that the patient's left eye had been enucleated and replaced by an ill-fitting and poorly-matched prosthesis. Healed linear scars on both arms and legs were also noted. The patient wore an identification band from a hospital in a larger community about 100 miles away. On the day following his admission to the local hospital, he was transferred to the Cherokee Mental Health Institute.

Following admission to this hospital, the patient gave a history of recently purchasing cattle in a neighboring state for his ranch in Arizona. He then described a period of "amnesia" which had terminated when he "came to" in the local hospital. Initial psychiatric examination suggested the presence of some disorientation and confusion, but the patient appeared to be circumstantial and tangential in his responses. Additional physical findings included the possibility of a mild ataxia of the lower extremities. Because the patient stated that for many years he had been taking anticonvulsant medication regularly, including diphenylhydantoin and phenobarbital, these drugs were continued.

During his first week of hospitalization, the patient became loud, demanding, angry and hostile. Occasionally he appeared somewhat irrelevant in his responses, and his affect was regarded as inappropriate. He "vaguely remembered" having been hospitalized at this institution approximately 12 years earlier, but denied any recollection of the details. He also gave a history of having been treated for "epilepsy" at a state hospital in Arizona. He stated that he lived on a cattle ranch in that state with his wife and several children. He attributed the loss of his eye and the scarring of his extremities to an automobile accident.

Throughout his entire period of hospitalization he remained bombastic, hostile, demanding and extremely sarcastic. Efforts were made to locate his wife and other family members through addresses supplied by the patient, but they proved uniformly fruitless, the inquiries being returned marked "addressee unknown." At no time did the patient display any clinical signs of a seizure disorder. An electroencephalogram was interpreted as an essentially normal tracing, and no evidence of a seizure disorder was noted on review of an

electroencephalographic tracing which had been made at the time of his previous admission 12 years earlier. Finally, during the fifth week of his hospitalization, the patient eloped in company with another patient, and no word has been received concerning his subsequent whereabouts.

Because of the numerous vagaries and inconsistencies in this man's history, his skillfulness in simulating a seizure disorder (neurologica diabolica[1]) and his behavior while in the hospital, considerable effort was made to establish his history. The data may be summarized as follows: The patient apparently was born in Minnesota in about 1922. His mother died of tuberculosis when he was a small child. In 1930 he was seen at a child guidance clinic in St. Paul for psychological evaluation because of disturbed behavior. Subsequently, at the age of nine years, he was admitted to a children's sanitarium in Minnesota with a diagnosis of childhood tuberculosis. At that time he was described as "a nervous child and a problem in terms of discipline and supervision." He was said to be troubled with nightmares, sleep-walking and enuresis. Because of these problems he was again referred to a child-guidance clinic. At the age of 12 he was discharged from the tuberculosis sanitarium.

During the next several years he apparently indulged in considerable delinquent activity, and for a period of time was placed on probation and in a foster home. Finally, at the age of 14 he was placed in a county school for boys, and at the age of 16 he was sentenced to a training school for boys because of car theft and attempted burglary. At the latter institution he was described as "distant, quarrelsome, distrustful and seclusive." It was while in the training school that he had his first "seizure," characterized by "foaming at the mouth," jerking of the body and apparent unconsciousness. However he is said never to have been incontinent or to have injured himself. At the age of 17, he was transferred to a state hospital, where a diagnosis of "psychoneurosis with hysterical convulsions" was made.

Thereafter, the patient left Minnesota and wandered about the country. He was described as having had numerous arrests, parole violations and other legal difficulties. In 1943 he was sentenced to a penitentiary in Arizona. While so detained, he was examined at an Arizona state hospital and diagnosed as "a psychopathic personality, without psychosis." In 1950, apparently, he was released from custody in Arizona.

The patient was first admitted to this hospital in December, 1951, after having been found on the streets of a large city nearby, suffering from "repeated convulsions." After approximately 10 weeks of hospitalization, he eloped. A few weeks later he was returned to the hospital by police officials from a nearby state, where he had been arrested for car theft. On that occasion he was not readmitted, his discharge from the hospital having been accomplished while he was on escape status.

Throughout the subsequent 12 years, several inquiries concerning him were received from hospitals in surrounding states. His current tour of Iowa institutions apparently began in the summer of 1963, when he presented himself at several hospitals successively, complaining of "seizures" and requesting medication.

Conspicuous inconsistencies in this patient's history include an alleged head injury while in military service and a medical discharge from the U. S. Army during World War II. He also claims to have been treated in various military and Veterans Administration facilities. The veracity of these allegations appears questionable. Conflicting accounts concerning the loss of his left eye were also elicited. It seems most probable that he sustained that loss during an altercation while he was imprisoned in Arizona.

In conclusion, therefore, he is an individual with a very lengthy, involved, bizarre and superficially convincing history of a severe seizure disorder. His history involves numerous admissions to medical facilities under very dramatic circumstances. Hospitalization has usually been climaxed by an aggressive, belligerent change in the patient's behavior, followed by an abrupt, unauthorized departure from the institution. Objective examinations, insofar as can be determined, have failed to reveal any valid evidence of a seizure disorder.

COMMENT

In spite of the confusions and inconsistencies in this case, it seems reasonable to conclude that this man has a significant emotional and behavioral disturbance. Historical details, as related by the patient, lacked veracity, and appeared in many instances to be confabulations. Over all, his behavior appeared inherently self-destructive.

Exact classification of patients whose behavior and clinical histories warrant the designation of "Munchausen's syndrome" appears uncertain. Superficially, these cases show many signs of a sociopathic personality disturbance, but the presence of more severe underlying psychopathology cannot be excluded. Some authors have described this condition as a form of malingering, but such an explanation does not seem appropriate for a group of patients who willingly submit themselves to multiple diagnostic procedures, and even, on occasion, to extreme therapeutic measures such as prefrontal leucotomy.

Finally, the attention of physicians is invited to patients of this type, and to the necessity of identifying them promptly. An element of suspicious caution should be entertained regarding the management of the unfamiliar individual who presents himself for treatment at an emergency

facility under dramatic circumstances, and who gives a vague and inconsistent history.

SUMMARY

An unusual case, labeled "Munchausen's syndrome," has been presented in detail. The patient has a severe behavioral and emotional disturbance associated with an alleged seizure disorder. His background is characterized by multiple hospitalizations with factitious symptoms, and numerous confabulatory elements in his case history. The presence of a seizure disorder was not objectively established.

In the future it is anticipated that this man may present himself at various hospitals in Iowa under somewhat similar circumstances.

REFERENCES

1. Asher, R.: Munchausen's syndrome. Lancet, **1**:339-341, (Feb. 10) 1951.
2. Barker, J. C.: Syndrome of hospital addiction (Munchausen's syndrome); report on investigation of seven cases. J. Mental Science, **108**:167-182, (Mar.) 1962.
3. Clarke, E., and Melnick, S. C.: Munchausen's syndrome or problem of hospital hoboes. Am. J. Med., **25**:6-12, (July) 1958.
4. Chapman, J. S.: Peregrinating problem patients: Munchausen's syndrome. J.A.M.A., **165**:927-933, (Oct. 26) 1957.

State University of Iowa
College of Medicine

Clinical Pathological Conference

SUMMARY OF CLINICAL FINDINGS

A 39-YEAR-OLD FARMER was admitted to the University Hospitals six hours after a tractor injury. His health had been excellent until two years prior to admission, when he had undergone conservative management for a bleeding peptic ulcer. He had experienced three episodes of bleeding, the most recent one having occurred four months prior to his accident.

The patient said that his tractor had gone out of control on a slippery grass slope, had flipped over and had pinned him beneath a wheel. The wheel had lain across his pelvis and right leg for a period of four hours. At admission he was alert and complained of pain about the right hip.

His initial blood pressure was 68/40 mm. Hg, and his pulse rate was 132/min. Bilateral subconjunctival hemorrhages were present. There was swelling and pain about the left shoulder. A large abrasion was present over the posterior right hemithorax, and pressure on the rib cage caused pain in the back and right posterior rib cage. The breath sounds were clear. No heart murmurs were present, and heart sounds were easily heard. The abdomen was flat, with some tenderness and rigidity in the right upper quadrant. No bowel sounds were audible on auscultation. Multiple abrasions were present over the right lower extremity, and there was an obvious deformity in the middle of the thigh. The patient could not flex or extend the right foot, and sensation to pinprick was absent on the dorsal and plantar surfaces of the foot. A four-quadrant abdominal tap yielded no free blood or abnormal fluid.

While the initial roentgenogram was being taken, two units (1,000 ml.) of whole blood were given to the patient, which raised his blood pressure to 140/60 mm. Hg. An indwelling catheter was placed in his bladder, and the initial return was clear. Roentgenograms were interpreted as showing a transverse fracture through the right femur, a fracture dislocation of the right hip and a small fragment of bone detached from the femur, a dislocation of the sacroiliac joint on the left, fractures of the eighth, ninth, tenth, eleventh and twelfth ribs on the right, with subcutaneous emphysema and pneumomediastinum, fracture of one lower dorsal vertebra, and fractures of the left clavicle and scapula.

Immediate attention was given to the fracture dislocation of the right hip. One per cent Xylocaine was injected into the right hip joint, and reduction of the dislocation was carried out by means of flexion and traction. Roentgens demonstrated reduction of the dislocation, with the posterior lip of the acetabulum lying between the femoral head and the acetabulum. A Steinmann pin was placed through the tibial tubercle, and the right leg was placed on a Bohler-Braun frame with 25 lbs. of skeletal traction.

One hour after admission, 10 per cent mannitol solution was started. After one liter had been given, the urine turned from dark red to an amber color. Five milligrams of phentolamine methanesulfonate (Regitine) was given intravenously, and 5 mg. was added to an additional 500 ml. solution

of mannitol. Penicillin and streptomycin were started. The amber-colored urine contained 0-3 red blood cells per high-power field, there were 4-8 large granular casts, and tests were positive for blood and albumin. The patient excreted 50 ml. of urine per hour. Twelve hours after admission, the urine output had fallen to only 20 ml./hr., and the blood potassium had risen to 6.4 mEq./L. The amber color of the urine had disappeared. Peritoneal dialysis was begun. Over the next four-day period, 19 exchanges were carried out, with 2,000 cc. of peritoneal dialysis solution (Peridial) in each exchange. During the first three days, 2,500 ml. of 10 per cent mannitol was given intravenously. The urine output remained close to 500 ml./day, with a fixed specific gravity. This urine demonstrated no fat particles on repeated examinations. After the first six hours of peritoneal dialysis, the blood urea nitrogen was 50 mg. per cent; creatinine 4.0 mg. per cent; potassium 4.8 mEq./L.; and the sodium 128, chloride 96, and CO_2 16.4 mEq./L. The figures for successive days, along with those for other laboratory studies, are presented in Table 1.

The management of renal failure and the subsequent diuresis were complicated by a persistent ileus which required intermittent nasogastric-tube suction and intravenous fluids. The fluids during the first four days consisted of 5 per cent dextrose in water to cover insensible loss, and normal physiologic saline to replace the gastric aspirate. On the fourth day the urinary output improved. Initially the diuresis fluid was replaced by normal saline, but studies of the urine at that point indicated the kidneys were retaining salt. Consequently, during the remainder of the diuresis, the patient was given 5 per cent dextrose in water. On the tenth day, the patient became confused, and it was decided that he was dehydrated because of the marked diuresis. The rate of infusion was increased so as to add about six liters of total body water and still replace current excessive loss of water in urine. The patient became alert and coherent, and began drinking voluntarily again. The urinary output reached 6,600 ml. on the eleventh day. The blood creatinine reached a peak of 8.4 mEq./L. on the sixth day, and then gradually returned to normal. The patient did not eat a normal hospital diet until his thirteenth hospital day. He was plagued by persistent hiccups.

He remained alert and cooperative. His vital signs remained stable until the fourth day, when his pulse rate jumped to 100/min. At that time, subcutaneous air was palpated over the right posterior lateral rib cage. He also complained intermittently of burning pain in the lower left chest region. On the tenth hospital day, he became hypotensive, with a tachycardia of 160/min. His hemoglobin level on that date was 8.7 Gm./100 ml. Chest roentgenograms showed a marked opacification in the right side of the chest. Thoracentesis on the tenth and eleventh days obtained a total of

TABLE I

Day of Hospitalization	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Blood Given (units)	4	1									3	2	2	2			15	2	
Blood Vol. (liters) (expected 6.4 liters)	5.2			5.3										6.0				5.30	
Hemoglobin (Gm/100 ml)		14.4	15.3				12.5			8.7		10.0		10.5	12	11.6	13.5	14.2	
Hematocrit (%)		48	44				35			27			29	33	39	40	41	42	
Potassium (mEq/L)	6.4	4.8	5.3	5.4	5.3	4.3				4.4		4.7			4.1		4.4		4.4
BUN (mg.%)		50	70	130		165	170	120		185	140		105				36		60
Creatinine (mg.%)		4.0	6.4	7.1		8.4	8.3	7.3		5.4	3.8		2.1				1.1		2.3
Sodium (mEq/L)	110	128	134	137	139	140	140	144	148	162		147					138		147
Chloride (mEq/L)	108	96	98	98	96	95	96	100	106	113		108					111		106
CO_2 (mEq/L)	18.1	16.4	16.6	20.9	23.7	16.6	19.9	20.1	29.6	31.1		24.5					15.3		22.7

1,750 ml. of bloody fluid from the right pleural cavity. This fluid had a hemoglobin value of 5.4 Gm., and a hematocrit value of 20 per cent, and the culture was reported as negative. Repeated chest roentgenograms were taken. Eight units of whole blood were given. Blood volume studies done at that time with radioactive serum albumin and the Volumetron indicated a volume of 6 L., with an expected blood volume of 6.4 L.

On the morning of the seventeenth hospital day, the patient awakened with epigastric distress and vomited several large clots of blood. Gastric cooling at 10-15°C. did not effectively stop the bleeding, for the patient coughed up bright-red blood adjacent to the gastric tube. He remained in borderline shock. Direct laryngoscopy, bronchoscopy and esophagoscopy were performed because of the persistent coughing-up of blood. Nine units of blood had been given during a 12-hour period, but he still remained clinically hypotensive. It was decided to carry out an exploratory celiotomy.

Soon after succinylcholine chloride and sodium pentothal induction, a diagnosis of cardiac arrest was made. A thoracotomy revealed asystole, and it was treated with manual massage, intraventricular injection of 1:10,000 epinephrine hydrochloride, and intravenous levarteranol bitartrate (Levophed) until a sinus tachycardia was initiated. The patient was maintained on oxygen for the remainder of the abdominal exploration. A partial gastric resection and a Billroth I type of anastomosis were carried out. Following the operation, the patient never regained consciousness, and expired two days later.

CLINICAL DISCUSSION

Dr. Sidney E. Ziffren, Surgery: Mr. Mericle will present the student discussion.

Mr. Dale Mericle, junior ward clerk: We believe the subconjunctival hemorrhages and abrasions on the patient's back were due to his being thrown on the ground forcibly. The fractures of the ribs were due to the same cause. The subcutaneous and mediastinal emphysema was due to the lung punctures made by the fractured ribs, and these punctures led to dissection of air along the ribs under the skin and dissection along the vessels through the lung into the mediastinum. The silent abdomen, we attribute to the insult of the crush, and possibly to the patient's shock state. The right upper-quadrant tenderness and the rigidity of the abdomen could have been due to intervertebral neuralgia or possibly to the crushing of the dorsal vertebra. The fracture dislocation of the right hip and the right femur, of course, were due to trauma. The anesthesia and inability to move the right foot, we believe, were due to impingement of the tibial nerve by the fracture. The patient's renal failure after admission was due to the crush syndrome, and possibly also to his original hypotensive state upon admission, leading to shock kidney. His continued ileus was due to the insult of the crush. Peritonitis was ruled out by the lack of fever, and obstruction by the lack of borborygmi and pain. The hiccups were due to uremia and/or possibly a mild mediastinitis following the pneumomediastinum. The hemothorax which was discovered on the tenth day was traumatic in origin, and the fluid was subsequently diluted to a hemoglobin level of 4.5 per cent by pleural effusion.

The hematemesis, causing his probably fatal bleeding on the seventeenth day could have been caused by: (1) activation of his original peptic-ulcer disease, with erosion of a large vessel, or (2) development of a stress ulcer. We ruled out uremia as a cause of massive gastrointestinal bleeding, for we felt he was out of the severely uremic state at that time. Death, we attributed to irreversible shock initiated by hemorrhage on the seventeenth day, to which the further insult of cardiac arrest was added.

Death, then, was caused by systemic tissue hypoxia. We believe the autopsy will have shown anoxic changes in the central nervous system, liver, kidneys, adrenals, heart and lungs.

Dr. Ziffren: Do you wish to ask Mr. Mericle any questions? If not, Dr. Mason is going to discuss the protocol.

Dr. Edward E. Mason, Surgery: This patient wasn't completely unknown to me. I saw him several times a day for a number of weeks. (Special studies of this man's blood and urine enzymes were included in a study supported by NIH research grant 06500.) I did, however, leave on vacation about the time that he began to hemorrhage; so I have no first-hand knowledge of the "tail end" of his course. However, I think it apparent that he died of the results of hemorrhagic shock, after having recovered from a crush injury.

Since I agree with what has already been said about the cause of death and the causes of the various findings, I'd like to spend most of my time talking about the crush injury and the kidney problem. This man was under a heavy crush for four hours, and he was then released. Kidney damage doesn't appear immediately after release from the crushing mechanism. It takes eight to 10 hours. He was admitted to the hospital about six hours after release from the crush, and I believe that if he had not been treated with mannitol, he would have developed the usual complete renal shutdown, and that oliguria would have been present for two or three weeks. He probably would have died from it, or at least would have required very extensive extracorporeal hemodialysis if he were to have recovered.

We had another patient several years ago who had been subjected to a similar crushing injury and who had been crushed for two hours before he was released. He had oliguria lasting for almost three weeks, followed by a diuresis for three more weeks. He had seven hemodialyses, each one last-

ing about eight hours. Initially, dialyses were frequent, in order to get rid of the potassium which had been released from the crushed muscle and which usually causes death in these patients in about 1½ or 2 days after the renal shutdown. We measured the concentration of glutamic oxaloacetic transaminase (GOT) and leucine amino peptidase (LAP) in his urine. The GOT rose to levels above 80, and the LAP to levels above 5 or 6, and they stayed up for about two weeks.[1]

I should like to contrast the above findings with the sequence of events in the present case, in which the patient not only had a crush injury but in addition had sufficient fractures to justify an estimate that four or five units of blood might be required to keep him out of shock. As a matter of fact, he was in shock when first admitted. He responded to blood transfusions, but then became shocky again. This regression may have added to his renal damage. The mechanism of kidney damage in crush injury is a reduced flow of blood through the kidneys, and as a result of the reduced flow of blood, a larger amount of water and salt is reabsorbed from the tubules. The concentration of colloidal material in the tubules becomes so high, so viscous, that it becomes almost like a gel. There is an increase in resistance to blood flow through the kidneys. Casts may be formed, and there is asphyxial damage to the renal epithelium, and probably also some damage from the high concentration of abnormal pigments which are blocked up in the tubules.

Now the effect of mannitol is a multiple one. Elkinton has studied the distribution of mannitol. It is distributed in the extracellular fluid. Notice that on the second day, the patient's serum sodium concentration was 128 mEq./L. I believe that value, for the chloride and the CO_2 were consistent with it. (I don't believe the values reported on the previous day, for the chloride and CO_2 were in excess of the sodium, and that is impossible. I think a laboratory error was surely made.) If one gives mannitol in considerable amounts (this patient had 2½ liters of 10 per cent mannitol), with the expansion of extracellular fluid there is a dilution of the electrolytes. Not only does the mannitol cause expansion of extracellular fluid, but it holds water in the nephron. It keeps the water and sodium from being reabsorbed, so that the fluid in the nephron continues to pass along. It thus prevents the increase in viscosity, and the asphyxia and the damage which occur as a result of the changes which I mentioned before as probable causes of renal failure in crush injury.

Mannitol was recommended for treatment of crush injury in 1947 by Corcoran and Page.[2] I think the idea came from Homer Smith, who observed that people who had been crushed and who were being studied with mannitol as a means of measuring glomerular filtration rate did not develop acute renal failure. It took until just a few years ago for this to become general knowledge, and for mannitol to be used extensively. Surgeons are using it a great deal now in the treatment of patients in whom they feel there is an increased risk of renal failure. It is difficult, though, to get any evidence as to its efficacy, for acute renal failure occurs only about once in 1,000 patients who undergo major operations.

The opportunity to study a patient like this one is very rare. The other patient whom I mentioned, who had had a crush injury, came in a day after his crush. The patient now being discussed was seen within hours of his injury, and we were able to start treatment with mannitol at about the time the crush-syndrome kidney lesion was beginning to develop. He had clear urine when he came in, but he soon began to pass the typical dark urine. It looked like the urine that I am told a patient with malaria and blackwater fever has, and the same train of events occurs in malaria when patients begin to pass large amounts of these pigments. So I think the mannitol was very effective here, but it is difficult to say what would have happened had the mannitol not been given.

If I may digress for a moment, I should like briefly to review some results we've had in examining the excretion of GOT in the urines of 18 patients who had cholecystectomies, and of some 45 patients who had other major upper-abdominal operations.[3] As a result of some of the reports in the literature, we believe that anesthesia and major surgery cause a marked decrease in blood flow through the kidneys. We think there may well be some mild kidney damage in many patients, and that we can study this by examining the release of cellular enzymes in the urine following anesthesia and surgery. This would also hold for crush injury, if one had enough patients to study.

So these are the changes which occur: The urine enzymes rise. The sodium concentration in the urine falls, and the potassium rises immediately and then falls again, suggesting that the fluctuation may be an ischemic effect rather than an effect of aldosterone. It has been said that the sodium falls in the urine and the potassium rises because of aldosterone, but if this were true, why wouldn't the potassium stay up? It may be that the rise in potassium is due to ischemic damage, and it may even be during this early period that the fall in sodium concentration is due to the increased reabsorption of sodium from the filtrate as a result of the mild ischemic damage.

We studied another group of patients who had been given mannitol, and we found that the rise in the concentration of enzymes in the urine is prevented immediately after the operation. However, after several days, the patients who had received mannitol had higher concentrations of enzymes in the urine than did patients who had not received mannitol. That finding may indicate that with the cloudy swelling and the effect of the osmotic diuretic, there may be some mild

cellular damage due to the mannitol. However, during the period when the patients need it, we do provide protection. This, then, constitutes some objective evidence that mannitol is effective in such circumstances.

Now, let's return to this patient. We obtained urines every four hours for several weeks while this patient was in the hospital, starting from the first urine that was obtained after his admission. Figure 1 shows that the period of oliguria was very short compared with that of the other crush patient. We see that the serum GOT and LAP levels were just as high in this patient as they had been in the other patient, but that the concentration of urine enzymes was not so high and did not stay up as long. We also see that the concentration of sodium in the urine was much lower than the concentration of sodium in the serum. In a severely damaged kidney, the urine tends to have the same chemical composition as the extracellular fluid. So this finding would indicate that this kidney, although somewhat damaged, was still able to do chemical work, was still able to reabsorb sodium and maintain a urine sodium that was quite low and quite comparable to what we see in patients undergoing any major operative procedure. It should also be noted that in contrast to the serum potassium, the urine potassium was maintained at a high concentration throughout. So the tubules that were functioning were healthy and were functioning quite well.

Also we calculated endogenous creatinine clearance, and found that initially it was about 10, whereas the normal is above 100 for a man of this patient's age. It dropped to 3, and then began to rise to 13 and 22. Anything above 30 begins to allow one to make a pretty good prognosis. It is evident that the patient had some kidney damage,

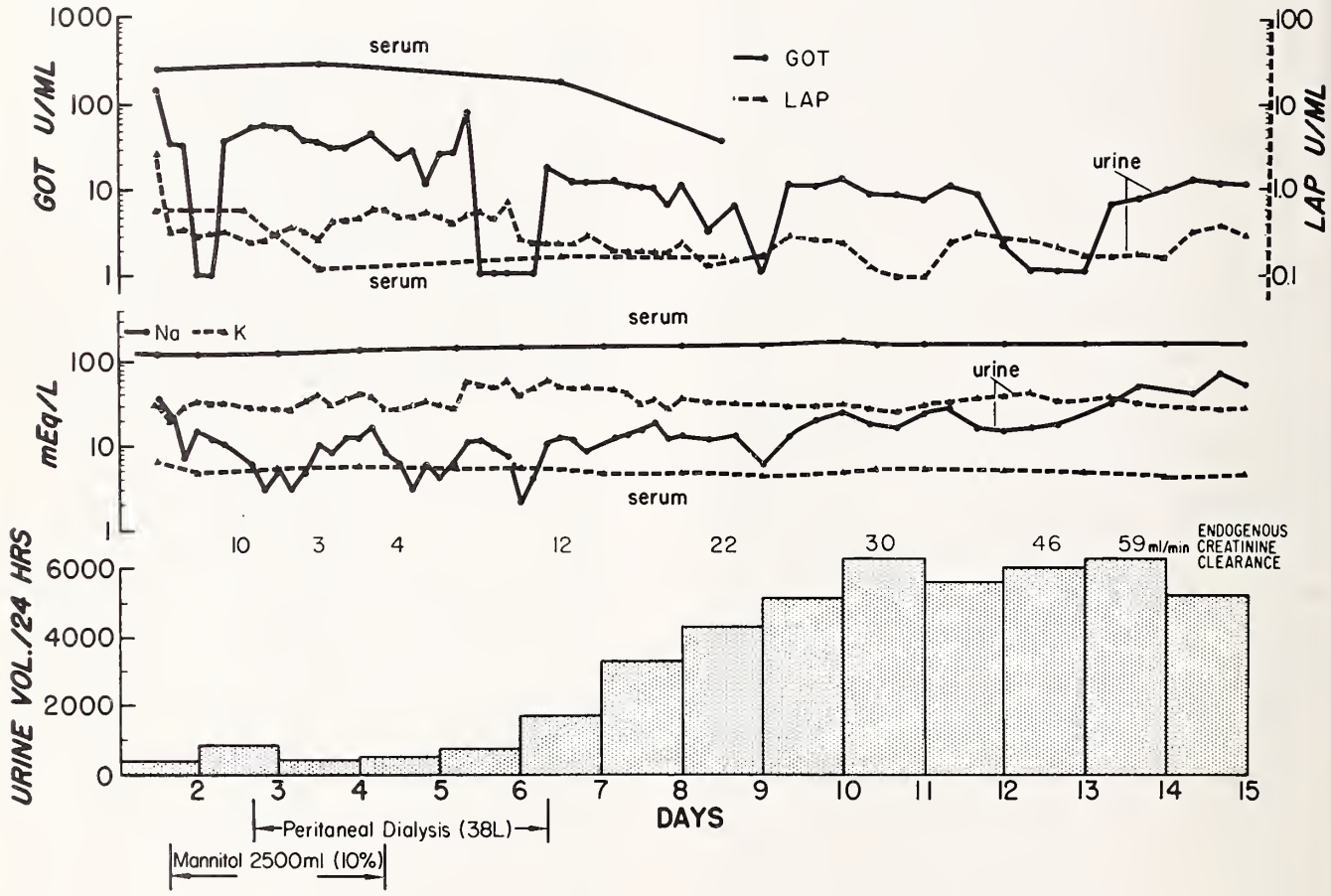


Figure 1. A composite of three graphs having a common abscissa, showing the days following injury. The periods of mannitol infusion and peritoneal dialysis are shown during the early days of treatment. The lowest graph is a bar graph with daily urine volumes, showing the six days of oliguria and the later period of diuresis. Endogenous creatinine clearance is shown by the numbers inserted on a line above the bar graph. They show the marked reduction during the third day, and the gradual return to about one-half of estimated normal by the end of two weeks.

The middle graph shows sodium and potassium concentrations in serum and urine, and indicates that the kidney was doing chemical work by markedly reducing the concentration of sodium and increasing the concentration of potassium throughout the period of study.

The upper one-third of the figure contains data regarding urine and serum glutamic oxaloacetic transaminase (GOT u/ml.) on the left ordinate, and leucine amino peptidase (LAP u/ml.) on the right ordinate. Here again the concentrations of these enzymes in urine are quite different from the concentrations of them in serum.

since the endogenous creatinine clearance didn't come back to normal during the two weeks, and I should guess from our experience with other patients that it might have been abnormal for several months.

So it is my impression that this man probably benefited from receiving mannitol infusions at about the time when his kidney damage was beginning to develop, and I think he would have survived had he not subsequently developed another bleeding episode from his duodenal ulcer which has already been mentioned, and if he hadn't also bled from his lungs.

I believe there were some roentgenograms which indicated a considerable amount of fluid in his chest, and the protocol says that when this was aspirated, it represented additional blood. Perhaps we might stop at this point and look at his x-rays—both the admission roentgens which show all the fractures and also the later chest x-rays.

Dr. F. M. Behlke, Radiology: The roentgen findings are not subtle at all. They demonstrate the massive bone and soft-tissue injuries that this man sustained. He had a fracture dislocation of the right hip. There was also a diastasis at the left sacroiliac joint, with a fracture fragment through the inferior pelvic rim at this level. He had a transverse fracture through the right mid-shaft femur. He had multiple displaced fractures through his right lower rib cage. He had a fracture of one of his lower thoracic vertebrae. He had a pneumomediastinum, and he also had fractures through the left clavicle and scapula. Subsequently, as the protocol mentioned and as Dr. Mason has stated, he developed a homogeneous opacification in his right hemithorax which subsequently was shown to be due to a bloody effusion.

Dr. Mason: You will notice in the data which are given in Table 1 that on the tenth day he had a serum sodium of 162, a chloride of 113, and a CO_2 of 31 mEq./L. Again, I believe these figures because they are all internally consistent. They represent a dessication at a time when the patient was passing six or seven liters of urine a day. This part of the problem may have been exaggerated by the mannitol. It is conceivable that the diuresis was somewhat excessive because of some effect of the osmotic diuretic on the kidney, causing an inability of the lower part of the nephron to reabsorb water in a normal manner. We do see quite a diuresis in some patients during this phase of acute renal failure, but this diuresis was excessive, and it led to a state of hypertonic dehydration. Some people have referred to this as Luetscher's syndrome, and the treatment for it has simply been to increase the infusion of 5 per cent glucose.

It's necessary to increase the total body water by whatever percentage the concentration of electrolytes exceeds normal. This was done, and the patient's confusion and semi-coma were reversed. He became alert again, and was able to resume normal alimentation. This is part of the problem of hypertonic dehydration. As the patient becomes dehydrated and confused, he is no longer aware of thirst, he no longer drinks, and he becomes even more dehydrated. Six liters of 5 per cent glucose were given on that day, as I recall, and larger amounts of daily fluids were given to prevent a recurrence. As I said before, I don't know what his findings were at postmortem, but I don't believe that I could predict them anyway. I think this man died of irreversible shock, and I don't quite know what the cause of that may have been, nor are the autopsy findings likely to be specific.

Dr. Ziffren: Do you have any questions you want to direct to Dr. Mason?

Student: Could the right hemothorax and the bleeding ulcer, occurring several days after admission, possibly have shown a relation to hypofibrinogenemia secondary to the initial trauma?

Dr. Mason: The duration here was such that I wouldn't think so. The patient had sustained a severe crush injury, bleeding into his fracture sites and so forth, and had a number of blood transfusions. He was treated for his traumatic difficulties, and then was treated for his mild uremia. I forgot to go into the details of the peritoneal dialysis. It was used for 1½ or 2 days to keep his potassium down. But when these things all had been taken care of, and when he was really doing quite well, he apparently began vomiting blood and perhaps had more bleeding into his pleural cavity. I doubt very much that this was due to a clotting defect. I think it must have been due to a duodenal ulcer which had bled several times before. We know that duodenal ulcers are often activated by severe trauma and by stress (though I hate to use that word), and we know this patient had been through enough to cause a reactivation of his ulcer. It also seems reasonable that if he had several ribs broken, and had a pneumomediastinum and subcutaneous emphysema, he had enough injury to his lungs to account for the bleeding into his chest. Thus I don't think we need to drag in hypofibrinogenemia.

Dr. William B. Bean, Internal Medicine: Do you have anything to say about myoglobin? Right after World War II, Bywaters and a number of other people reported studies on myoglobin leaking into the blood stream after crushes, particularly when large muscle masses were involved. Do you think that this played any role in our patient's renal or other clinical difficulties?

Dr. Mason: I think it did, though it's hard to know to what extent. The hemoglobin and myoglobin do pass through the glomerular filter, and I suspect that by virtue of the increased concentration of these materials in the tubule, this gel-like, viscid material could become so dense as to cause impaired flow of fluid through the nephron. This, in turn, would back up, preventing glomerular

filtration, and would cause the increase in renal vascular resistance which has been measured experimentally under these circumstances. Of course I'm being pretty hypothetical. Dr. Warner, Dr. DeGowin and others here did some of the original work on this, and maybe they have comments to make about it.

Dr. Emory D. Warner, Pathology: I don't believe I have anything particular to add, except that very often mechanical obstruction is not a very satisfactory cause for renal shutdown. The amount of tubular obstruction, with or without pigments, is not necessarily extensive. In some cases it is quite extensive, but in others there is very little in the way of obstructive material in the kidney tubules that can be visualized. I think there is little doubt that either hemoglobin or myoglobin contributes to the development of this syndrome in some way or other, but I am not convinced that the precise mechanism has been established.

Dr. Ziffren: In the protocol, we are told that the patient was given Regitine. Can you tell us why?

Dr. Mason: Whenever one has severe trauma or shock, there is a release of norepinephrine from the adrenals. There is also increased action of intrinsic nerves in the kidney and other areas, and a renal vasospasm results. In experiments with the treatment of shock, it has been observed in animals that life can be prolonged through treatment with competitive inhibitors of norepinephrine. There is also something released in the hemolysis of cells and crushed muscle which causes vasospasm that is not counteracted by inhibitors of norepinephrine. Because in treating patients with shock over a number of years we have observed that phentolamine frequently causes urine to flow when it hasn't been flowing before, and because of the experimental evidence that we knew about, we felt we also should treat him with Regitine in an attempt to alleviate any effects that endogenous norepinephrine or reflex vasospasm might have.[4]

Student: Was it necessary to do a gastric resection? Couldn't the surgeons just tie off the bleeding vessel?

Dr. Ziffren: Before we can answer that question, I think we'll have to see what the postmortem findings were. I believe the surgeons didn't have much choice.

Dr. Jack M. Layton, Pathology: At necropsy, the multiple traumatic injuries that Dr. Behlke demonstrated roentgenographically were found. The right massive hemothorax had been caused by jagged fragments of the fractured ribs tearing the pleura and the accompanying vessels. Organization and loculation of the blood clot accounted for the difficulty in aspirating the pleural space. The hemothorax produced massive pulmonary collapse on the right, and the lower lobe of the left lung was also collapsed.

In reviewing the clinical record, I find that on the morning of the eleventh day, the patient was coming along quite well. It was decided to put sandbags under his right lower ribs and his spine in order to get a better approximation of the clavicular fracture. It may have been as a result of the handling on that day, with the sandbag pressure on the ribs, that the rib fragment was displaced, the pleura was torn and the bleeding occurred. At 8:00 in the morning, he was getting along fine, and at 9:45 in the evening there was a decided worsening of his condition.

The left thoracotomy wound, the pericardial incision and the myocardial ecchymoses attested to the cardiac massage which had been employed. Linear ulcers in the esophagus, and changes in the gastric mucosa consistent with cooling, followed the instrumentation in these areas.

Despite the patient's history, no peptic ulcer was found, even though a very careful search was made. The intestinal lumen contained a considerable amount of semi-liquid blood. The Billroth I operation was intact, and there was no leakage around any operative suture lines.

Both kidneys were enlarged. The right one weighed 310 Gm., and the left one weighed 265 Gm., against a normal of about 150 Gm. They were swollen and tannish-red, displaying evidence of acute tubular necrosis, with a few focal areas of epithelial regeneration.

The postmortem serum urea nitrogen was 225 mg. per cent, and the serum creatinine was 5.5 mg. per cent. I am puzzled by the discrepancy between these figures and the findings of serum urea nitrogen 60 mg. per cent and creatinine 2.3 mg. per cent which were given to you for the nineteenth day, shortly before the patient died. Several years ago, Drs. Butler and Straumfjord, who were in the Pathology Department at that time, made a careful study of the correlation between antemortem and postmortem blood urea nitrogens and blood creatinines, and the correspondence was fairly close—decidedly different from what these figures indicate. I don't know which determination was in error, if either.

Dilatation of the pancreatic acini, which is a finding in severe azotemia and uremia, was diffuse and pronounced in this case. I don't know how long these changes persist after the azotemia and uremia have been corrected. I suppose that the pancreas isn't returned to normal immediately, but neither do I know that the changes remain so severe for a matter of 10 to 14 days. Centrolobular necrosis of the liver, congestion of the spleen and viscera, and cerebral edema were other findings associated with ischemia and azotemia.

The surgeon at the time of operation did find multiple superficial gastric ulcers from which bleeding seemed to be arising, but he did not find a peptic ulcer. The hemorrhage was more of an oozing from multiple superficial gastric ulcers, rather than bleeding from a large peptic ulcer.

The patient did have renal failure, and the shock episode accompanying the hemothorax and later the bleeding from the gastrointestinal tract at least reactivated the renal lesion and led to his death. Ischemia and renal failure were very important factors in the patient's death.

There are some questions which arise in my mind. Was the mannitol started early enough? Should the treatment of the renal lesion have taken precedence over the manipulation of the fracture? Was time lost at that point? I wonder whether the peritoneal dialysis and the mannitol therapy acted to delay the onset or the seriousness of the acute tubular necrosis, and whether these should have been carried on for a greater length of time—perhaps not continuously, but intermittently. Are you sure of measuring the enzyme and electrolyte concentrations in urine, rather than in glomerular filtrate?

Dr. Mason: I think that mannitol should have been started earlier, and that if it had been started very soon after the patient was released from the crushing mechanism, he might not have had any kidney damage. In the early days, from the condition of the patients' renal tubules, I'm sure that there was damage. We had a reduction in endogenous creatinine clearance which persisted.

The only fact I wanted to bring out was that there was quite a marked difference between this patient and the other patient who had had what I believe was a comparable crushing injury. I don't know whether the mannitol could be used for a longer period of time or not. There is a recent article by Francis Moore entitled "New Treatment for Old Problems"[5] in which he reviews TRIS (hydroxymethyl), rheomacrodex and mannitol. He says that one probably shouldn't use mannitol for more than two days because it might cause damage, and he is worried about the cloudy swelling that we see with hypertonic sucrose and other hypertonic osmotic diuretics. Also, the peritoneal dialysis can be injurious as well as helpful.

In general, when we have a patient with a crush injury, we feel that we must have a very efficient dialysis, and we use extracorporeal hemodialysis. But in this instance we thought the kidney damage would be mild because of the mannitol, and that all the patient needed was a little help for a few days, until his urine volume came up high enough so that he could get rid of the potassium. We used only peritoneal dialysis only in a limited manner to carry him over this phase—to keep him from dying from potassium poisoning. It has been observed that patients who have received repeated peritoneal dialysis lose so much protein from that procedure that it may be injurious. This was mentioned by Merrill in an article in the NEW ENGLAND JOURNAL OF MEDICINE.[6] There are many problems, and there are differences of opinion about each component of the therapy, as well as regarding the condition itself.

Whether we are measuring urine or glomerular filtrate, whether we are measuring enzymes that come from kidney cells or that leak through from the serum, I don't know. We are now collecting additional data from both blood and urine in an effort to adjudicate some of those problems.

Dr. Ziffren: Dr. Bonfiglio, do you want to say something?

Dr. Michael Bonfiglio, Orthopedic Surgery: Only one comment about the treatment of the fractures and the dislocation. This, along with other things, was done in the emergency area, before the patient was moved to the intensive-care unit. It is easier to take care of a patient if one can quickly reduce a dislocation and put the limb in traction. The reduction and traction serve to reduce whatever part pain may play in the occurrence of shock. These were done while blood was being given and other things were being taken care of at the same moment. But there was no delay specifically in the management of the patient.

Dr. Ziffren: Dr. Culp, do you have anything to say about dialysis?

Dr. David A. Culp, Urology: I don't have much to say about peritoneal dialysis, except to agree with Dr. Mason that it is not so efficient as the artificial kidney. Where one has an acute problem, I believe the artificial kidney is preferable to peritoneal dialysis. As far as the renal shutdown is concerned, we're dealing with multiple factors. The hypotension and renal ischemia both play parts. Myoglobin and hemoglobin produce a toxic effect on the tubular cells, as well as an obstruction in the tubular lumen. Therefore, several different therapeutic measures must be utilized simultaneously. The patient needs to be treated for his shock immediately. The mannitol helps to decrease the viscid material in the lumen of the tubules, but it may also exert some beneficial effect by decreasing the interstitial tension and edema. These are only a few of the aspects of therapy for acute renal insufficiency. Unfortunately, we cannot control the amount of toxic tubular effect which occurs. Our experience with mannitol has been with intravascular hemolysis following transurethral prostatic resections. It has been our experience that the earlier mannitol is started, the more favorable is the response. However, it has also been our experience that there may be an increase in urine flow, and even though the urinary output reaches 2,000-3,000 cc. daily, evidence of tubular damage is demonstrated by the rising levels of blood urea nitrogen and creatinine. Mannitol helps in the problem by providing a greater freedom in the administration of fluids and electrolytes, but I don't believe that it relieves all of the problems, particularly those associated with damage to the tubular cells.

Dr. Ziffren: Are there any other questions or comments?

Dr. Layton: Would it be useful to reduce the

acidity of the urine? In the experimental work on kidney lesions following crushing injury, during World War II and just after it, as well as in the middle 1930's at this hospital, it was found that a short period of renal ischemia, an acid urine, and hemoglobin or myoglobin in the urine seemed to be the factors which were necessary for the production of these lesions. At one time in this hospital, one had to give bicarbonate to a patient before he could give him a blood transfusion. Should we resurrect that procedure?

Dr. Mason: A commission appointed in England to study blackwater fever instituted treatment with bicarbonate. Then in 1947, Maegraith and Havard published a paper[7] in which they called attention to the fact that if the same amount of sodium bicarbonate were given to a person who was perfectly normal, he would get an elevation of BUN up to two or three times normal, and that it would stay up for several weeks. A friend of mine at the University of Minnesota, Ed Flink, worked on this problem for a while and came to the conclusion that the isoelectric point of hemoglobin and myoglobin was such that if one tried to alkalinize the urine, he might very probably make it only slightly acid and at the isoelectric point of these pigments, and thereby might increase the precipitation. I think very few people are using alkalis now, and the approach is aimed more toward keeping the concentration of the pigments low, rather than toward reducing the precipitation from the pH standpoint. Dr. Warner, do you want to add to or modify the answer to that question?

Dr. Warner: No, I shall say only that it still is a fact that in dogs given hemoglobin intravenously, the renal shutdown syndrome can be produced, frequently though not routinely, if they are excreting an acid urine. On the other hand, if the dog is excreting an alkaline urine, any number of hemoglobin injections uniformly fail to produce a fatal renal shutdown. The syndrome has been produced in dogs even though the urine was alkaline, if the renal blood flow were partially obstructed at the time of the hemoglobin injection.

Dr. Mason: It just occurred to me that a few years ago, we were infusing sodium bicarbonate into dogs and the dogs responded with a tremendous diuresis, and we couldn't get an alkalosis without clamping off the ureters or removing the kidneys. I wonder whether the effect of the experimental alkalinization in animal pigment nephropathy wasn't simply to cause a diuresis and thus dilute the solute.

Dr. Warner: That doesn't help us. A normal dog on an ordinary diet has an alkaline urine. Special dietary treatment was required to obtain an acid urine.

Dr. Ziffren: A gentleman asked a question earlier about whether the surgeon couldn't just tie off the bleeder. I presume that's been answered, for all the surgeon found were multiple small bleeding ulcer points throughout the stomach.

I assume from what Dr. Layton has said that he felt the patient had not really recovered from his renal damage, and that the loss of blood into the pleural cavity precipitated another episode of shock. This started the whole cycle of events over again. Is that what you meant?

Dr. Layton: I implied that as a high probability.

SUMMARY OF NECROPSY FINDINGS

Massive hemothorax, right (1,800 cc.)
Pulmonary collapse, bilateral, extensive
Multiple fractures:
- a. left clavicle and scapula
- b. eighth, ninth, tenth and eleventh ribs, right
- c. middle third of right femur
- d. anterior compression, eleventh thoracic vertebra
- e. posterior neural arch, fifth lumbar vertebra
- f. left sacroiliac region
- g. right hip

Status postoperative:
- a. partial gastrectomy, Billroth I, for upper gastrointestinal tract bleeding
- b. thoracotomy, left, for cardiac massage

Acute tubular necrosis with patchy epithelial regeneration, kidney, bilateral
Dilatation of pancreatic acini
Centrolobular necrosis of liver
Congestion of abdominal viscera
Cerebral edema
Cardiac hypertrophy

STUDENTS' DIAGNOSIS

Multiple fractures
Irreversible shock
Peptic ulcer or stress ulcer

DR. MASON'S DIAGNOSIS

Multiple fractures
Crush syndrome
Irreversible shock
Bleeding duodenal ulcer

REFERENCES

1. Mason, E. E., Chernigoy, F. A., and Cusminsky, B.: Computer analysis in development of new diagnostic methods. J.A.M.A., **178**:1088-1090, (Dec. 16) 1961.
2. Corcoran, A. C., and Page, I. H.: Crush syndrome: posttraumatic anuria. J.A.M.A., **134**:436-441, (May 31) 1947.
3. Mason, E. E., Chernigoy, F. A., Cadwell, R. E., and Burke, J. P.: Clinical study of mild renal ischemia. Surg. Gynec. & Obst., (to be published).
4. Mason, E. E.: "Circulatory Insufficiency," In: Bland, J. H.: Clinical Metabolism of Body Water and Electrolytes. Philadelphia, W. B. Saunders Company, 1963, pp. 527-568.
5. Moore, F. D.: TRIS buffer, mannitol and low viscous dextran: three new solutions for old problems. Surg. Clin. North America, **43**:577-596, (June) 1963.
6. Burns, R. O., Henderson, L. W., Hager, E. B., and Merrill, J. P.: Peritoneal dialysis; clinical experience. New England J. Med., **267**:1060-1066, (Nov. 22) 1962.
7. Maegraith, B. G., and Havard, R. E.: Dangers of intensive alkali treatment in blackwater fever. Lancet, **2**:338-339, (Sept. 9) 1944.

Editorials

KING-ANDERSON IS STILL UNWISE

As a consequence of the landslide Democratic victory in the recent election, it is inevitable that the Administration will again make a strenuous effort in Congress for the passage of the King-Anderson Bill or a similar measure to subsidize hospital and nursing-home care for the elderly under Social Security financing.

The medical profession has been and will continue to be unalterably opposed to King-Anderson and other schemes popularly known as "Medicare." It has several reasons. Primarily, doctors object because they recognize King-Anderson as an initial step toward the establishment of a national health service for people in all age groups.

Physicians are not alone in their opposition to a program of so-called hospital insurance for the aged under Social Security. An article in the September 14, 1964, issue of BARRON'S WEEKLY, a national business and financial paper published by the Dow Jones Company, warns that "Medicare will imperil, not advance, the nation's welfare," and declares that the measure is "a dangerous prescription."

The article presents the issues clearly: "This country, humanitarian by tradition and by instinct, is scarcely neglecting its senior citizens. Day by day, it is showing fresh ingenuity and flexibility in meeting that challenge, not least by giving private enterprise its head. Under the circumstances, piling a whole new program of hospital and nursing-home care atop our existing mountain of Social Security commitments cannot be justified financially or socially. On the first count, it would put a further incalculable strain on the already overburdened old-age retirement system. Even worse, extending the paternalistic approach into this vast new area inevitably would tend to sap the sturdy self-reliance with which most Americans are now seeking to build up health protection for their sunset years. In short, Medicare, despite the medicine-man claims of its pitchmen, would aggravate, rather than cure, the nation's ills."

The article points out that the Medicare prescription, in the judgment of most experienced observers, would cost far in excess of the Administration's estimates. The benefits to the individual would be much less than the public has been led to expect, and they would not solve the health problems of the 19 million or more people over 65 years of age in this country.

BARRON'S emphasizes that instead of ending worries, Medicare would compound them. Such a program would bring bureaucracy into an area already well covered by both private enterprise and public charity. At the end of 1962, three-fourths of American people 65 years of age or older had means for meeting the costs of their health needs. The Kerr-Mills Act (implemented in Iowa and in 40 or more other states as Medical Assistance for the Aged) now provides care for those who are no more than marginally self-sufficient economically. Few people seem to realize that King-Anderson, if enacted, would provide very few services, and would waste money by furnishing them to the well-to-do aged as well as to the improvished ones of them. Most importantly, perhaps, it would weaken if not destroy the incentive for every citizen to prepare as best he can for his old age.

The article in BARRON'S concludes with the following paragraph:

"Once the long arm of government reaches into this broad field, no man can say—in view of the all-too-familiar tendency of welfare programs to grow like Topsy—how far it ultimately will reach. The medical profession long has held that Medicare is merely an opening wedge for some kind of socialized National Health Service in the British fashion. Suspicion will not down that the doctors' diagnosis is right. If so, this much is as certain as death and taxes: the eventual cost in human as well as financial terms will soar like a fever chart."

PLEASE TAKE PART IN OUR READERSHIP SURVEY

We call your attention to the questionnaire facing page xviii in this issue of the JOURNAL. Please take a few moments to fill it out and mail it back to us. No postage stamp will be required.

This inquiry is submitted to our readers at the request of the State Medical Journal Advertising Bureau, Inc., a cooperative maintained by 34 state medical society publications of which the JOURNAL OF THE IOWA MEDICAL SOCIETY is one. The purpose of the Bureau is to procure national advertising for all of the 34 journals. We are sure you know that in the past such advertising has kept our JOURNAL nearly self-sufficient, financially, but that recently it has not done so.

The intent of this questionnaire is to determine whether physicians read their state medical journal regularly, and specifically whether they read the advertisements that appear in it. It is hoped that the outcome of this inquiry will provide an effective argument for the sale of advertising space to the pharmaceutical industry and related groups.

The return of completed questionnaires by a large number of readers will be convincing evidence that doctors do read the JOURNAL OF THE IOWA MEDICAL SOCIETY. Your cooperation will be appreciated.

Editorials continued...

PREDNISONE FOR HERPES ZOSTER

Herpes zoster is often an extremely painful and discouraging malady in elderly people. Various types of treatment have had little effect on the course of the disease, and it hasn't been unusual for painful neuralgia to persist for many months. A recent report by Dr. F. A. Elliott, professor of clinical neurology at the University of Pennsylvania College of Medicine,* on the treatment of herpes zoster with high doses of prednisone should be of great interest to physicians who are called upon to treat this condition.

Dr. Elliott's article records the results in a series of 11 patients with herpes zoster on the trunk and extremities, two patients with herpes involving the geniculate ganglion, and three patients with ophthalmic herpes. The average age of the 16 patients was 71 years, and in all of them the rash was accompanied by severe pain. In a control group of 10 patients, who also had an average age of 71 years, eight had lesions on the trunk, one had an ophthalmic involvement, and one had geniculate herpes. In the selection of patients for the study, only those over 50 years of age were admitted, for it is people in that age group who may be expected to have persistent pain.

Treatment was started within one to 10 days following appearance of the rash. In 14 patients, prednisone was administered in doses of 60 mg. per day for a week, 30 mg. per day for a second week, and 15 mg. daily during the third week of treatment. Two patients were given 300 mg. of cortisone acetate daily during the first week in place of prednisone.

Under this plan of treatment the average duration of pain after initiation of therapy was 3½ days. In eight of the 10 patients in the control group, pain persisted for 3½ weeks. In the treated group there were no instances of persistent post-herpes neuralgia. Two patients in the control group continued to suffer pain after eight and 13 months. One patient with geniculate involvement who received prednisone therapy recovered from facial paralysis in 10 days, and another patient with similar paralysis recovered in 19 days. In one untreated case, the facial paralysis persisted for four months. It was the author's impression that the rash cleared more promptly in the treated group, though this factor was more difficult to evaluate with any degree of accuracy. There were no complications of the disease either in the treated or in the control group, no generalized eruption occurred, and there were no unusual neurologic developments.

In this series of cases, it was found that the earlier therapy was started, the better were the results. When treatment was started within one or two days of the onset of the rash, pain was usually relieved within 12 to 36 hours. Patients in whom treatment was started on the fourth day or later ordinarily continued to have pain for five to eight days, but the pain was diminished.

Dr. Elliott says that large doses of prednisone must be given if satisfactory results are to be obtained, and reports from others confirm his statement. Two patients not included in this series were given 15 mg. of prednisone daily with no effect whatever upon the pain.

He acknowledges that the number of patients treated by his method are too few to justify a conclusion that it will always prevent post-herpetic neuralgia. The overall incidence of this type of persistent pain is about 10 per cent, but in people over 60 years of age, more than one half probably have pain lasting more than a year.

The author points out that the acute pain is attributed to inflammation of the root ganglia and peripheral nerves. The cause of persistent pain is not clear. It is postulated that it may be due to post-inflammatory fibrosis in the root ganglia and sensory nerves. The rationale of corticotrophin or steroid therapy is that it may inhibit inflammation of the nerve structures in the acute stage of the disease.

Dr. Elliott cites the experience of Scheie in the treatment of 70 cases of herpes ophthalmicus. Intravenous corticotrophin was given, together with topical and parenteral cortisone. This method was very effective in relieving pain and reducing the incidence of ophthalmic complications, and none of the group developed dissemination of the rash. He points out, however, that Merselis reported 17 cases of generalized herpes, 11 of which occurred in patients who were receiving long-term steroid therapy for leukemia or some other serious disease. Four of the patients died. In six patients with uncomplicated herpes zoster, the rash became generalized during the administration of steroids, resulting in a condition resembling chicken pox. The generalized rash developed in those patients in whom immune responses had already been reduced by drug administration for long periods or by the disease for which the steroids were given.

Dr. Elliott points out that the hazard of the development of a generalized eruption during the steroid treatment of herpes zoster is relatively small, and that if it does occur, it resembles an attack of chicken pox. The small risk involved must be weighed against the fact that high doses of prednisone administered early can dramatically shorten the disease.

Of unusual interest was the rapid recovery from facial paralysis experienced by two patients in the series. In untreated patients with geniculate herpes, the paralysis may persist for many months and it may be permanent.

The author states that more experience is neces-

* Elliott, F. A.: Treatment of herpes zoster with high doses of prednisone. LANCET, 2:610-611, (Sept. 19) 1964.

sary to determine the relative merits of corticotrophin and corticosteroids in the treatment of the disease. Prednisone has the advantage of simplicity of administration, and it is the medication of choice in elderly and debilitated patients who are so often victims of this disorder. Corticotrophin is probably preferred in the treatment of fulminating cases and in those with involvement of the eye.

SHOULD WE CHANGE OUR TREATMENT FOR SHOCK?

For many years, by elevating the foot of the bed, most of us have placed shock patients in a reverse Fowler's position. This practice has been predicated on the hypothesis that the head-down position elevated the blood pressure and improved cerebral blood flow. However a recent study from the University of Washington has raised considerable doubt concerning the validity of this assumption and concerning the merit of the head-down position in the treatment of shock.

A Seattle group* were prompted to study the effect of the reverse Fowler's position or the Trendelenburg position because of an observation they made during a laboratory experiment. A dog had been inadvertently bled to the point of shock, and fortuitously an arterial cannula was in place with the pressure transducer at the right atrial level. In an effort to treat the animal's hypotension, the head of the table was lowered 30 degrees, and much to the surprise of the observers, its blood pressure fell by 5 to 10 mm. Hg. Afterward, the same procedures were carried out in five other animals that had been anesthetized by various agents, and falls in blood pressure occurred in all of them when they were placed in the head-down position.

To study the phenomenon more thoroughly, the authors conducted experiments on 14 additional anesthetized dogs, and included measurements of carotid blood flow as an indicator of cerebral blood circulation before and after hemorrhage. Their results revealed that in the head-down position there was a significant lowering of blood pressure in the animals which had been bled. The carotid blood flow was decreased in the control animals when the table was tilted, but there was no change in blood flow in the animals which had been bled. As a result of these studies, the authors concluded that there is no improvement in either blood pressure or in carotid blood flow from the use of the Trendelenburg position.

Others have demonstrated that in the Trelendenburg position the weight of the abdominal viscera pressing on the diaphragm reduces the vital capacity of the lungs by 15 to 20 per cent.

The authors have concluded that a modest elevation of the legs, with the trunk and head in the horizontal position, is most desirable in the treatment of shock. The failure of blood pressure to improve and a reduction in vital capacity have convinced them that the Trendelenburg position should not be used in cases of this sort.

Time-honored practices are accepted as gospel until some doubting Thomas questions their validity. Routine orders that have been in vogue for many years are the ones that are most in need of careful scrutiny.

* Gunteroth, W. G., Abel, F. L., and Mullins, G. L.: Effect of Trendelenburg's position on blood pressure and carotid flow. SURG., GYNEC. & OBSTET., **119**:345-348, (Aug.) 1964.

THE TREATMENT OF FAT EMBOLISM

A report from the Radcliffe Infirmary, Oxford,* on the successful treatment of a severe case of fat embolism through the use of intermittent positive-pressure respiration should be of great interest to the physician who manages traumatic injuries. The Oxford group state that the overall mortality in cases of fat embolism varies from 10 to 20 per cent, but that in patients in whom coma occurs, the mortality rises to 50 or 55 per cent.

Current procedures for the management of patients with fat embolism and severe respiratory or cerebral signs include tracheotomy, and the administration of oxygen and antibiotics. Other methods which have been tried include intravenous heparin, intravenous dextran, and hypothermia, but the results have been inconclusive.

In the case reported from the Radcliffe Infirmary, all the conventional methods of treatment, including tracheotomy and bronchoscopic aspiration were employed, but the patient remained cyanotic and comatose. A cuffed tracheotomy tube was inserted, and the chest was inflated by means of inflating bellows. As a result, the cyanosis cleared and the amount of frothy pulmonary secretion diminished. However when inflation was discontinued, froth welled up from the tracheotomy tube, and cyanosis returned.

A respirator was then employed, instead of the inflationary bellows, and it was set at a rate of 24 per minute and at a maximum pressure of 30 cm. H_2O. Not until oxygen had been added to the air drawn through the respirator did the patient's color, pulse and blood pressure become stabilized. Because of coma and fever, hypothermia was induced by surface cooling. Curare was administered because the patient's breathing wasn't in phase with the respirator. About 24 hours after the start of intermittent positive-pressure respiration, the patient regained consciousness. A week was required to wean him from the respirator gradually.

The authors concluded that intermittent positive-pressure respiration with added oxygen had been proved effective in the treatment of patients with severe fat embolism. This had been demonstrated by the rapid clearing of the cyanosis and

* Denman, E. E., Cairns, C. S., and Holmes, C. McK.: Medical memorandum: case of severe fat embolism treated by intermittent positive pressure respiration. BRITISH M. J., **2**:101-102, (July 11) 1964.

Editorials continued...

by the reduction in the amount of frothy sputum.

It appears obvious that the cooperative efforts of the surgeon, the bronchoscopist and the anesthetist are necessary in the treatment of patients with severe fat embolism, and that the mechanical help of intermittent positive-pressure breathing may be life-saving.

A NEW TRIUMPH FOR FLUORIDATION

If any doubt remains concerning the benefits to be derived from the fluoridation of a city's water supply, the report of a before-and-after study in Providence, Rhode Island, should dispel it.*

Between November, 1952, and February, 1953, a dental caries survey was conducted there by the Rhode Island State Department of Health. The survey was carried out in six different schools in varied geographical areas, and included dental examinations for 8,853 of the 35,142 parochial and public school children in the city. The youngsters were students in kindergarten through ninth grade, and their ages ranged from four to 17 years.

Fluoridation of the water supply for the City of Providence (at approximately one part per million) was started in August, 1952, and has continued without interruption.

The "after" portion of the study was carried out in the same schools and in the same grades between November, 1963, and April, 1964, about 11 years after the initial survey. This second time, the study included dental examinations for 10,630 children out of a total school population of 39,403. All examinations were conducted by two trained dentists. Carefully selected and trained students recorded the data. Findings were transferred to dental record sheets. Finally, the data were put on punch cards and were analyzed by electronic equipment. All children present at the school on the day of examination were included. No attempt was made to eliminate students who hadn't been in continuous residence in the city.

A comparison of the data compiled in the two separate studies—the first of them conducted before fluoridation of the municipal water supply, and the second one 11 years after the introduction of that measure—revealed the following information:

1. There was a marked reduction in the prevalence of dental caries in the permanent teeth of children in the age groups studied. The average reduction was about 55 per cent.

2. There was a marked reduction in the incidence of dental caries in deciduous teeth. At the peak of prevalence, which is at about seven years of age, there had been a reduction of about 48 per cent over the 11-year period.

3. The reduction in the number of permanent teeth missing, decayed or filled was marked in all of the age groups between six and 16 years. A similar reduction was found in deciduous teeth of children between the ages of four and 11 years.

4. There was no significant difference in incidence of caries by sex. The percentages of normal permanent teeth and normal deciduous teeth were about equal in girls and boys.

5. The study demonstrated that the dental health problem in the City of Providence had been greatly reduced and brought under better control during the 11-year period of fluoridation of the municipal water supply.

* Forsyth, B. D., D.D.S., M.P.H.: Prevalence of dental caries in permanent and primary teeth eleven years after fluoridation. RHODE ISLAND M. J., **47**:480-485, (Oct.) 1964.

SURGERY FOR INTESTINAL OBSTRUCTION IN THE NEWBORN

An editorial on intestinal obstruction in the newborn by William F. Pollock, in the July, 1964, issue of SURGERY, GYNECOLOGY AND OBSTETRICS,* should be helpful to everyone concerned with the care of such infants. He gives special emphasis to a one-step surgical technic in cases of small-intestine obstruction, and also urges that resection of the dilated proximal segment be performed earlier and more often.

The axiom "An infant is not just a miniature adult," he says, is particularly appropriate in a consideration of the subject of intestinal obstruction. Certain types of blockage occur only in infancy—congenital atresia, meconium ileus and pyloric stenosis. In infancy and childhood, intussusception, megacolon and malrotation are encountered frequently. Other causes such as incarcerated hernia, volvulus or tumors, of course, are not restricted to any age group.

The California surgeon reminds the reader that intestinal obstruction at any age is a surgical condition, and that every effort should be made to correct the difficulty surgically as promptly as possible. Delay should be reserved for only certain specific conditions such as pyloric stenosis or ileocolic intussusception. In infants and children, recurrence or persistence of a primary intestinal problem is seldom observed. Operative correction in this group of patients involves devising a stoma which will relieve the obstruction and restore the continuity of the bowel. Adults, on the other hand, often require additional efforts to prevent recurrence, or there may be a continuance of the disease that produced the obstruction.

Pollock asserts that most full-term newborns of adequate weight are well enough hydrated to withstand most of the necessary surgical procedures. Premature infants and those with associated and significant anomalies have poorer prognoses. In modern medical centers, there are fewer and fewer deaths among such babies as a result of surgery,

* Pollock, W. F.: Intestinal obstruction in newborn (Editorial). SURG., GYNEC. & OBSTET., **119**:104-105, (July) 1964.

and an increasing proportion of deaths can be attributed to associated problems.

In the adult, ileostomy is usually performed as a permanent measure and not as a temporary lifesaving procedure. In the infant, however, the author states that ileostomy is frequently done as a temporary lifesaving operation to relieve an intestinal obstruction. There is no question of its value, he says, in relieving an obstruction, although it is advisable to close the stoma as soon as possible. He also asserts that most physicians are under the impression that newborn infants are so sensitive to a deprivation of fluid and electrolytes that they are unable to withstand the losses that occur with an ileostomy. On the contrary, he contends, most of these babies handle such losses surprisingly well. Unfortunately, in his editorial, he scrupulously avoids the important problem of fluid and electrolyte replacement. Without very wise management of this phase of therapy, the babies just will not survive.

Edema of the tissues occurs after a resection, for edema is common to all wounds. In the adult, edema of the stoma may result in a delay of function, but the lumen of the intestine is so large that persistent obstruction rarely results. In the infant, however, edema may produce a serious interference with function and obstruct an anatomically perfect anastomosis for protracted periods of time.

Pollock emphasizes that the mechanics of the stoma are less important considerations than the ability of the proximal intestine to effect functional peristalsis. A stretched, dilated and ineffectual intestine proximal to an anastomosis is the commonest cause of failure in the operative treatment of intestinal obstruction in infancy. Rather than attempt anastomosis of a widely dilated gut to a small ribbon of bowel distal to the point of obstruction, it is much better to resect the dilated portion back to the point where the intestine is of normal size and of normal peristaltic capability. In this way the proximal loop will be capable of effective peristalsis against the edematous stoma. This is true whether the stoma is end-to-end or side-to-side.

He also urges that if the viability of intestine is in question, it is unwise to delay for prolonged observation or to use special tests for viability. If viability is so questionable that special tests or manipulations are necessary to settle the question, the intestine may survive but it will never be healthy. As it heals, it will contract and shorten, and then will not possess normal motility. The time spent in determining viability could be better spent in resecting the bowel.

In his conclusion, Pollock reiterates that experience in many hospitals has clearly demonstrated that resection of the dilated proximal segment of obstructed intestine offers the best hope of cure.

Coming Meetings

IN STATE

Jan. 26-27 **Obstetrics and Gynecology,** SUI College of Medicine, Iowa City.

Feb. 16-19 **Refresher Course for the General Practitioner,** Medical Amphitheater, U. of I. College of Medicine, Iowa City, Iowa.

Feb. 18-19 **Sioux Valley Medical Association (70th Annual Meeting),** Sheraton-Warrior Hotel, Sioux City, Iowa.

CONTINENTAL U. S.

Jan. 4-8 **Stroke and the Cerebrovascular Diseases,** American College of Physicians, Rancho Los Amigos Hospital, Downey, Calif.

Jan. 9-10 **Symposium on Cerebral Vascular and Peripheral Vascular Disease,** Minnesota Heart Association, Radisson Hotel, Minneapolis.

Jan. 14-16 **Dermatology in General Practice,** Mound Park Hospital Foundation, Inc., St. Petersburg, Fla.

Jan. 17-23 **11th Annual General Practice Review,** University of Colorado School of Medicine, Denver.

Jan. 20-21 **American College of Physicians regional meeting for New York City internal medicine specialists,** Hotel Biltmore, New York City.

Jan. 20-22 **Diabetes in Review: Clinical Conference, American Diabetes Association,** Drake Hotel, Chicago.

Jan. 21-22 **Obstetrics and Gynecology,** University of Nebraska College of Medicine, Omaha.

Jan. 23-24 **Fourth American Psychiatric Association Colloquium for Postgraduate Teaching of Psychiatry,** O'Hare Inn, Chicago.

Jan. 25-27 **Sectional meeting, American College of Surgeons,** Atlanta Biltmore Hotel, Atlanta, Ga.

Jan. 25-30 **Workshop in Teratology—Drug Research Board of National Academy of Sciences,** University of California, Berkeley.

Jan. 27-29 **Bedside Diagnosis of Heart Disease (Part II),** Hahnemann Medical College and Hospital, Philadelphia.

Jan. 28-30 **29th Annual Session of International Medical Assembly of Southwest Texas,** Granada Hotel, San Antonio.

Jan. 29-30 **Eighth Annual Cardiac Symposium, Arizona Heart Association,** Arizona Biltmore Hotel, Phoenix.

Feb. 1-5 **Recent Advances in Diagnosis and Treatment of Diseases of the Heart and Lungs,** Hotel Fontainebleau, Miami Beach

Feb. 4-5 **AMA Committee on Aging—Conference on Aging and Long-Term Care,** Drake Hotel, Chicago.

Feb. 5-6 **Basic Vectorcardiography,** University of Nebraska College of Medicine, Omaha.

Feb. 6-9 **61st Annual Congress on Medical Education,** Palmer House, Chicago.

Feb. 15-17 **American College of Surgeons Sectional Meeting,** Bellevue-Stratford Hotel, Philadelphia.

Feb. 15-18 **Annual Convention, Medical Society of the State of New York,** The Americana, New York City.

Feb. 15-18 **Recent Advances in Gastroenterology,** University of California Extension, El Mirador Hotel, Palm Springs.

Feb. 15-19 **American College of Physicians—Pathology, Pathologic Physiology and Clinical Aspects of Renal Disease,** Presbyterian-St. Luke's Hospital, Chicago.

Feb. 18-19 **Fourth National Symposium on Cardiovascular Diseases,** Marriott Motor Hotel, Philadelphia.

Feb. 19-21 **American College of Physicians regional meetings of north and south California and Nevada,** El Mirador Hotel, Palm Springs.

Feb. 22-26 **American College of Physicians—Pain and Addiction,** Harvard Medical School, Boston.

Feb. 25-26 **Neurology and Psychiatry,** University of Nebraska College of Medicine, Omaha.

ABROAD

Feb. 26 **International Seminar on Legal Medicine,** Pittsburgh Institute of Legal Medicine, University of Rome, and Cavalieri Hilton Hotel, Rome, Italy.

Actions of the AMA House of Delegates in Miami Beach

November 29-December 2, 1964

Health care for the aging, a new teletype communications system for the medical profession, a statement on human reproduction and recommendations from the Commission on the Cost of Medical Care were among the major subjects acted upon by the House of Delegates at the American Medical Association's 19th Clinical Convention held November 29-December 2 in Miami Beach, Florida.

Tribute was paid to the late Dr. Norman A. Welch, AMA president who died on September 3, in a memorial statement from the Massachusetts Medical Society and in a resolution adopted by the House.

Dr. James Z. Appel, of Lancaster, Pa., vice-chairman of the AMA Board of Trustees and a member of the Board since 1957, was named president-elect of the Association. He will become president in June, 1965, succeeding Dr. Donovan F. Ward of Dubuque, Iowa, who took office after the death of Dr. Welch.

To take Dr. Appel's place on the AMA Board of Trustees, the House elected Dr. Joseph B. Copeland, of Austin, Texas, who for the past year has been serving as deputy commissioner of health in the State of Texas.

Final registration at the convention reached a total of 9,356, including 4,118 physicians.

HEALTH CARE FOR THE AGING

Definitive action on the issue of health care for the aging came with the House of Delegates' strong endorsement of Dr. Ward's Monday address, in which he declared that "We have no choice except to stand firm in our efforts to prevent the standards of health care in this country from being undermined by a radical departure from the unique American way which has accomplished so much for mankind."

Reaffirming the Association's opposition to the King-Anderson type of legislation, Dr. Ward said: "If we have been right in the past—and that is our unshakeable belief—then we are right today. And we shall be right tomorrow." Calling for renewed, intensive effort to prevent the passage of such legislation, he pointed out that "we do not, by profession, compromise in matters of life and death. Nor can we comprise with honor and duty." Dr. Ward, expressing pride in the medical profession, concluded his address with these statements:

"I pray that we all gain strength for renewed effort by the simple reflection that what we are doing is worthwhile—that if the effort is great, the results of not making the effort would be unthinkable—and, finally, what we are doing is vastly more important than ourselves.

"No more can be asked of us as citizens. No less should be offered by us in guarding our heritage of freedom."

To implement the ideas in Dr. Ward's address, the House gave unequivocal approval of a Board of Trustees suggestion that an expanded educational program be conducted in the next few months. In asking for this approval, the Board pointed out that "a variety of techiques and media must be utilized if the public, the Congress and special audiences are to be reached effectively."

The House took no action on three resolutions which would have altered the AMA position on health care legislation. Instead, the House adopted a resolution which "urged component associations to stimulate the state and local governments to seek the fullest possible implementation of existing mechanisms, including the voluntary health insurance principle, to the end that everyone in need, regardless of age, is assured that necessary health care will be available."

The state medical societies also were urged to send representatives to two conferences related to the issue of health for the aging—one on December 13 to help plan the new educational program and the other on January 9-10, 1965, to consider further implementation and expansion of the Kerr-Mills programs.

TELETYPE COMMUNICATIONS SYSTEM

The House approved a recommendation from the Board of Trustees for establishment of a teletypewriter communications service between the AMA and the state medical societies. The system will provide automatic and uninterrupted communications between AMA Headquarters and all participating state societies, and between the state societies without involving the facilities at the AMA Headquarters. The system also will enable any state society to communicate with all other TWX subscribers in the United States and Canada.

In approving the recommendation, the House emphasized that participation is optional with the state medical societies, but it also urged each society to "seriously consider taking advantage of

this rapid communications system." Installation and rental costs for the teletype equipment, both at AMA Headquarters and at the headquarters of each participating medical society, will be paid by the AMA. The cost of transmitting messages will be paid by whichever organization originates each message. It is hoped that the new communications system will become operative no later than July, 1965.

HUMAN REPRODUCTION

Updating its policies on population control, "to conform to changes in society and medicine" and "to take a more positive position on this very important medical-socio-economic problem," the House adopted the following four-point statement:

"1. An intelligent recognition of the problems that relate to human reproduction, including the need for population control, is more than a matter of responsible parenthood; it is a matter of responsible medical practice.

"2. The medical profession should accept a major responsibility in matters related to human reproduction as they affect the total population and the individual family.

"3. In discharging this responsibility, physicians must be prepared to provide counsel and guidance when the needs of their patients require it or refer the patients to appropriate persons.

"4. The AMA shall take the responsibility for disseminating information to physicians on all phases of human reproduction, including sexual behavior, by whatever means are appropriate."

In taking the action, the House also recommended that the AMA cooperate with the appropriate voluntary organizations in the field of human reproduction which have adequate medical direction.

COMMISSION ON THE COST OF MEDICAL CARE

With modifications suggested by the Board of Trustees, the House approved 33 recommendations from the Commission on the Cost of Medical Care. The suggestions had been rearranged by the Board into four sections—Research, Hospitals, Physicians and Miscellaneous. In accepting the Board report, the House also rejected a floor amendment which recommended that a medical advisory committee composed of practicing physicians be appointed to supervise the several studies which were suggested.

In presenting its conclusions and recommendations to the Board of Trustees, the Commission on the Cost of Medical Care expressed the hope "that the recommendations which are approved will help promote the wisest possible use of the medical care dollar and aid in the development of more meaningful data on the cost of medical care."

Dr. Donovan F. Ward, of Dubuque, president of the AMA, was glad to see Dr. Herman J. Smith, of Des Moines, at the AMA Clinical Meeting in Miami Beach. Dr. Ward is at the left.

The House learned that a substantial number of the studies recommended by the Commission are already under way, and that others are in the process of being implemented. The House also emphasized its appreciation of the importance of these continuing studies, and urged that adequate funds be provided for maximum implementation of the recommendations.

MISCELLANEOUS ACTIONS

In considering a wide variety of annual reports, special and supplementary reports and resolutions, the House also:

Urged strong support of the Woman's Auxiliary, and asked the state and county medical societies to give serious consideration to the idea of joint husband-wife membership;

Urged all state and component medical associations to approve, where feasible, the inclusion of a voluntary, nondeductible contribution to independent political action committees on the society's annual dues billing statement;

Reaffirmed its approval and support of the National Council for Accreditation of Nursing Homes.

The American Medical Association Education and Research Foundation reported to the House that one out of every six medical students, interns and residents in the U. S. is now receiving financial assistance from the Foundation's loan fund.

A Résumé of the Iowa Symposium on the Ecology of Rabies

Rabies is a persistent problem in Iowa, and the numbers of reported cases among wild animals, especially skunks, are increasing. While the incidence of human rabies is low, bites by rabid or potentially rabid animals or animals of unknown health status cause a great amount of fear, anxiety and uncertainty. These are genuine problems especially for physicians and veterinarians, but when anti-rabies vaccine is deemed necessary for a bite victim, the family's medical bills increase and the patient experiences the inconvenience and discomfort of 14 daily injections. The economic losses due to rabies in livestock in Iowa are sizable.

Because of the seriousness of the problem and in accordance with recommendations of the Governor's Study Subcommittee on Rabies Control, a Symposium on the Ecology of Rabies was held at Iowa State University, Ames, Iowa, November 20, 1964. Dr. George C. Christensen, dean, College of Veterinary Medicine, Iowa State University, opened the symposium by inviting attention to the many facets of the problem of rabies involving several professional disciplines such as medical, veterinary medical, public health and wildlife conservation personnel. Also affected are livestock owners, pet owners, law enforcement personnel and the average citizen.

Dr. William G. Winkler, assistant chief, Communicable Disease Control Rabies Investigations Laboratory, Atlanta, Georgia, noted the increasing importance of variations observed in laboratory and clinical experiences with rabies virus. These differences may be due to host-virus relationships, methods of infection or virus strains. By definition, rabies is caused by a neurotropic virus. Spread by the bite of an infected animal, it reaches the CNS by nerve pathways, and produces a uniformly fatal encephalitis.

The frequency and importance of apparent exceptions to these basic concepts of rabies are not fully understood. Laboratory studies suggest there are important physical-chemical differences in virus strains. It has been noted that a certain strain of laboratory mice develop clinical illness from rabies virus but do not die of the disease. Seventy to 100 per cent of rabid skunks shed rabies virus for as long as 18 days.

Dr. S. L. Hendricks, public health veterinarian, State Department of Health, stated that the reported total incidence of rabies in all species in the United States decreased from 8,837 cases in 1953, to 3,933 cases in 1963, but that since 1960, the reported cases in wildlife have exceeded those in domestic animals. Available data indicate the incidence of skunk rabies has increased in the last decade, principally in the midwestern states. In Iowa rabies is found in many species. Since 1951, cases of rabies in dogs have been relatively few. Each year since 1951 skunk rabies cases have outnumbered those in every other species, and in most years the number of skunk cases reported was larger than of all other species combined. The most recent human death in Iowa due to rabies occurred in 1951. The only human death reported in the United States in the first 10 months of 1964 was a child in southern Minnesota who had been bitten by a skunk while sleeping in a tent.

Dr. Vaughn Seaton, head, Iowa Veterinary Diagnostic Laboratory, Iowa State University, and Dr. William J. Hausler, Jr., acting director, State Hygienic Laboratory, State University of Iowa, indicated there are no major technical problems in the laboratory diagnosis of rabies. The flourescent rabies antibody test now employed by both of their laboratories is almost identical with the recognized standard mouse inoculation test. Heads of animals submitted to the laboratories, they cautioned, should be properly refrigerated, packaged and transported to the laboratory. Persons submitting specimens should follow the recommendations of the Iowa State Department of Health dated August 15, 1964, and titled "Submission of Specimens for Rabies Examination."* Specimens may be sent to the laboratory by railway express, bus, or hand-carried. If a specimen is sent by bus, funds must be included for taxi delivery service from the bus station to the laboratory.

SKUNKS GET RABIES FROM OTHER SKUNKS

Mr. B. J. Verts, project leader, Rabies Research, Illinois Natural History Survey, suggested that latent infections, *in utero* transmission of latent infections, and reactivation of latent infections resulting from environmentally and physiologically induced stresses may be mechanisms by which rabies is maintained among striped-skunk populations during interepizootic periods. Studies indicate that skunks acquire rabies from other skunks, and that transmission of rabies from other species to skunks is negligible. Principles considered fundamental in the epizootology of rabies among striped skunks deserve critical re-evaluation.

Dr. Kenneth D. Carlander, professor of zoology and entomology, Iowa State University, in his discussion of animal population dynamics, indicated the wild animal population density largely depends upon the carrying capacity of the environment. As populations approach the carrying capacity, there is usually an increased mortality, a decreased reproductive rate (fewer animals per brood, fewer broods per year, more still-borns or infant deaths), decreased growth rates of individual animals, and perhaps a lower vigor or resistance to disease and unfavorable conditions. High population densities result in more contacts and more opportunities for

* J. IOWA M. SOC., 54:616-617, (Oct.) 1964.

spread of contagious diseases. Reduction of population densities may result in increased reproduction and increased survival of the remaining animals. More efficient control of population densities can come through changing the carrying capacity of the habitat. However, changes of habitat for the control of an animal must generally be made with caution so as to minimize effects on other species.

Mr. Paul D. Kline, game biologist, Iowa Conservation Commission, stated that striped skunks probably are responsible for much of the rabies which has occurred in livestock in recent years. Rabies in other wildlife constitutes only a minor threat to the economic interests of man in Iowa. Skunks are valuable insect and rodent controls. Skunk population control for the suppression of rabies should be viewed with caution. Use of poisons and bounties are believed to be impractical methods of control. Skunk population control in areas of severe rabies outbreaks can best be carried on by local farmers through use of steel traps. Personnel of the Iowa Conservation Commission will serve as advisors if called upon to aid in local control and preventive measures. Section 109.87 of the Iowa Code, he thinks, should be modified so as to expose both species of skunks to a continuous open season.

ANTI-RABIES PROTECTION FOR MAN

Dr. Arthur P. Long, acting state commissioner of public health, reviewed the products available for preventing rabies in man, and discussed indications for their use. For post-exposure administration duck-embryo rabies vaccine has replaced brain-tissue vaccine to a large extent, and unfavorable severe reactions to this new vaccine seldom occur. Anti-rabies hyperimmune serum is available for passive protection in cases of severe exposure. Since it is horse serum, it must be used with caution. A detailed history of the exact circumstances of exposure is essential to a determination of the appropriate medical procedure. Pre-exposure immunization and periodic booster doses of vaccine are available for persons likely to be exposed to rabies.

Dr. Merlin L. Kaberle, associate professor, College of Veterinary Medicine, Iowa State University, said rabies vaccines for animal use have received extensive study under both laboratory and field conditions to determine their safety and efficiency. For pre-exposure immunization, the vaccine of choice for dogs is modified live virus, Flury strain, low egg passage chick embryo vaccine. It induces a high level of immunity persisting for three years or longer in most vaccinates. Nervous-tissue vaccine is quite immunogenic, but immunity is generally thought to persist for only about a year. Only nervous-tissue vaccine should be used in cats. Experimental data on post-exposure treatment of domestic animals is very limited. Vaccines may be used, and usually several doses are administered.

SUBCOMMITTEE RECOMMENDATIONS

Dr. John B. Herrick, extension veterinarian, Iowa State University, and chairman, Governor's Study Subcommittee on Rabies Control, summarized the subcommittee's report. It included the following recommendations:

1. Passage of state legislation requiring vaccination of dogs and cats, reporting of rabies cases, and confinement of animals that have bitten a person or are suspected of having rabies.
2. Maintenance of the present rabies surveillance and reporting program, and a continued study of methods to augment and improve the program.
3. Collection of additional epidemiological and epizootiological data.
4. Inauguration of investigations and field studies with special reference to the ecology of rabies in Iowa wildlife. Such investigations might include, but should not be limited to wild animal population studies, determination of population densities necessary to support a rabies epizootic, effects of rabies on wildlife populations, possibility of rabies carrier state among wild animals, importance of rabies in Iowa bats, methods of wild animal population control and methods of rabies control in wild animals.
5. Intensification of the educational program. It should be carried on by all agencies, groups and persons interested in the problem.
   a. State and county Extension personnel
   b. Conservation Commission
   c. Health agencies and others.
6. Establishment by the State Conservation Commission of a program of assistance to people in areas in which rabies in skunks or other wild animals appears to be epidemic.
7. Initiation of a study by the State Hygienic Laboratory to determine the desirability and feasibility of conducting tests to determine the neutralizing antibody level resulting from pre-exposure rabies immunization.

Dr. Long summarized the program and moderated a discussion period. Formation of a Mid-West Rabies Advisory Group or Conference was suggested, and the idea was favorably received. It was thought that such a group could discuss needed rabies research, exchange rabies information and coordinate rabies control measures in the midwestern states.

The symposium held at the Memorial Union, Iowa State University, Ames, was sponsored by the State Conservation Commission, State Department of Agriculture, State Department of Health, Iowa State University, State University of Iowa and the U. S. Public Health Service Communicable Disease Center.

STANLEY L. HENDRICKS, D.V.M., M.P.H.

President's Page

In the ensuing months, medicine will undoubtedly face a renewed assault upon its freedom. The form of this attack has not as yet been revealed. It could be worse than King-Anderson, and it could by-pass the Social Security System entirely.

Whatever the formula, it is apt to be the forerunner of a mechanism that will ultimately engulf the nation's health in a giant, rigid meshwork of bureaucratic control.

Judging from the past, we may expect emotionalism, pseudo-sentimentalism and distortion to challenge and pervert truth and reason. Attempts may be made to divide medicine's house.

The defense may be hampered by the weary and the reluctant who, failing to perceive the terms of surrender, would favor capitulation and compromise.

But if the fortunes of this war involve the priceless heritage of freedom, there can be no retreat and no partial victory.

The odds are formidable, for the opposition has fresh troops. The atmosphere is made dismal by the plethora of enlisted mercenaries. The challenge is overwhelming because the enemy needs but one foothold to win the entire war.

History, however, records other somber occasions when resolute determination produced victory. Marshal Ferdinand Foch believed that "a battle won is a battle in which one is not able to believe one's self vanquished." During the Battle of the Marne, in World War I, Foch sent the following telegram to his chief, Marshal Joseph Joffre—"My left yields; my right is broken through; situation excellent; I attack."

Happy New Year!

Otis D Wolfe

President

THE JOURNAL *Book Shelf*

BOOK REVIEWS

Textbook of Pediatrics, Eighth Edition, by *Waldo E. Nelson,* M.D. (Philadelphia, W. B. Saunders Co., 1964. $18.00).

This textbook of pediatrics by Dr. Nelson and 85 contributors remains a classic as it now appears in its eighth edition. Areas of great progress have been brought up to date—inborn errors of metabolism, fluid and electrolyte balance, consideration of the "battered child," among many others. The reviewer is tempted to go on and on extolling the virtues of this book, but that is not necessary. The book speaks for itself. Any physician of pediatric patients should have it near at hand for ready reference and continuing study.—*M. E. Alberts,* M.D.

Pediatric Procedures, by *Walter T. Hughes, Jr.,* M.D. (Philadelphia, W. B. Saunders Co., 1964. $7.50).

Most books on "procedures" are, at best, of questionable value since medical technics are best learned in medical schools, internships and residencies, rather than by reading. However this short volume has some highlights which make it worthwhile.

The flush method of measuring blood pressure in infants is well presented. The chapter on infusions is useful although this reviewer questions the wisdom of presenting interosseous infusions at all.

It is also doubtful whether Young's rectal dilators are superior to the skillful use of an educated finger. These dilators belong in the Smithsonian Institution rather than the pediatrician's office.

The methods of cardiac resuscitation are clearly described and should prove quite useful.

This book is valuable to interns and residents who are perfecting their pediatric technics. It should be recommended reading for senior medical students.—*Walter M. Block,* M.D.

Body Fluids and the Acid-Base Balance, by *Halvor N. Christensen,* Ph.D. (Philadelphia, W. B. Saunders Co., 1964. $6.50).

Programed instruction has found a useful place, particularly in the sciences where objective programed schemes can be constructed.

The current volume represents an attempt by the chairman of the Department of Biological Chemistry at the University of Michigan to provide such a program for medical students. It is a sophisticated review of undergraduate physical chemistry presented in an extremely challenging but entertaining fashion. It is impossible to review such a book in any other way than by noting that it presents the material in a most readable sequence of programed information.

The section headings are: pH and Dissociation, Sodium and Chloride Distribution, Potassium and The Cellular Compartment, Calcium and Phosphorus, Gas Transport, Metabolic and Respiratory Aspects of Neutrality Regulation, and Renal Correction of the Neutrality. Printing quality and figures are excellent. Making this a paper-bound volume has helped in keeping the price low.

This book provides an excellent review of physical chemistry applicable to medicine. It is not recommended for the general reader, but to those who are interested in medical education, particularly in presenting complex problems of the basic sciences. This represents a definite step forward and a new approach. —*John W. Green, Jr.,* M.D.

Infectious Diseases of Children, Third Edition, by *Saul Krugman,* M.D. and *Robert Ward,* M.D. (St. Louis, C. V. Mosby Company, 1964. $15.75).

The first edition of this book was published in 1958, the second appeared in 1960, and now—four years later—a third revision has been brought out so that it might be kept abreast of the many advances in knowledge in this important area of pediatric problems.

The authors of the text are well known throughout the pediatric world as experts in the field of infectious diseases in children. Hence the reader may have complete assurance that the statements made are accurate, dependable and up to date. Only the more common of the "communicable diseases of childhood" are discussed in this rather compact volume. Actually, its 423 pages are divided into 29 chapters, all but the last two of which deal with a single disease entity.

There are eight beautiful color plates and 66 figures. For younger physicians who have never seen a case of diphtheria, the color plate on page 44 provides a most realistic representation of tonsillar diphtheria. Its contrast to the streptococcal angina of scarlet fever shown on page 336 is striking indeed.

Two new chapters—16 and 17—dealing with acute respiratory disease were of especial interest to the reviewer. The first of these discusses etiology and points out that some 90 per cent of infections of the respiratory tract are non-bacterial in origin. The role of the various viral agents in producing respiratory disease is well set forth, and chapter 17 describes the clinical syndromes.

This is a very good book indeed. It is compactly written, with each sentence meaningful. The physician

should find authoritative answers to almost any question he may have about the etiology, clinical manifestations, diagnosis, complications and treatment of most of the infectious diseases he is likely to encounter in his pediatric practice.—*L. F. Hill,* M.D.

BOOKS RECEIVED

POLYPOID LESIONS OF THE GASTROINTESTINAL TRACT, by *Claude E. Welch,* M.D. (Vol. II in the Series MAJOR PROBLEMS IN CLINICAL SURGERY). (Philadelphia, W. B. Saunders Company, 1964, $7.50).

PRINCIPLES AND PROCEDURES IN CORRECTION, RECONSTRUCTION AND TRANSPLANTATION, by *John Marquis Converse,* M.D., with a section on the hand by *J. William Littler,* M.D. (Philadelphia, W. B. Saunders Company, 1964, $125 set of five volumes; singly—Vol. I, $30; Vol. II, $30; Vol. III, $30; Vol. IV, $25; Vol. V, $30).

BLOOD PROGRAM IN WORLD WAR II, prepared under direction of *Lt. Gen. Leonard D. Heaton* (Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1964, $8).

SMOKING AND YOUR LIFE, by *Alton Ochsner,* M.D. (New York, Julian Messner, Inc., 1964, $3).

CONSULTATION WITH YOUR DOCTOR FOR PERSONAL UNDERSTANDING OF MARRIAGE, by *Jean J. Rutherford,* B.A., and *Robert N. Rutherford,* M.D. (Chicago, Budlong Press Co., 1964, $1.50).

CURRENT PRACTICE IN ORTHOPAEDIC SURGERY, Vol. II, by *John P. Adams,* M.D. (St. Louis, C. V. Mosby Co., 1964, $13.50).

REHABILITATION MEDICINE, A TEXTBOOK ON PHYSICAL MEDICINE AND REHABILITATION, SECOND EDITION, by *Howard A. Rusk,* M.D. (St. Louis, C. V. Mosby Co., 1964, $15.50).

THE MASK OF SANITY, FOURTH EDITION, by *Hervey Cleckley,* M.D. (St. Louis, C. V. Mosby Co., 1964, $9.75).

THE RETINAL VESSELS: COMPARATIVE OPHTHALMOSCOPIC AND HISTOLOGIC STUDIES ON HEALTHY AND DISEASED EYES, by *R. Seitz,* M.D. (St. Louis, C. V. Mosby Co., 1964, $14.50).

INDUSTRIAL AND TRAUMATIC OPHTHALMOLOGY—SYMPOSIUM OF THE NEW ORLEANS ACADEMY OF OPHTHALMOLOGY (St. Louis, C. V. Mosby Co., 1964, $14.50).

MEDICAL PRACTICE AND PSYCHIATRY: THE IMPACT OF CHANGING DEMANDS, Group for the Advancement of Psychiatry Report No. 58 (New York, Group for the Advancement of Psychiatry, 1964, $.75).

MODERN TREATMENT, Vol. I, No. 6—Treatment of Headache, by *Arnold Friedman,* M.D., and Treatment of Acid Peptic Disease, by *Howard M. Spiro,* M.D. (Hoeber Medical Division, Harper & Row Publishers, Inc., New York, 1964, $16 per year).

OLAR Department at U. of I. Changes Its Plans

The clinical conferences in otolaryngology originally scheduled for February 12 and April 15 at the U. of I. College of Medicine, in Iowa City, have been cancelled. Instead, the Department of Otolaryngology and Maxillofacial Surgery will hold a two-day clinical conference on April 16 and 17.

1965 National Medicolegal Symposium

The American Medical Association and the American Bar Association have joined forces to sponsor the 1965 National Medicolegal Symposium, March 11-13, at the Dunes Hotel in Las Vegas. This biennial meeting, previously sponsored by the AMA alone, is expected to attract 1,200 physicians and attorneys.

According to Mr. Robert B. Throckmorton, AMA general counsel, topics to be covered include the common goals and ideals of law and medicine, the medical witness, and current litigation and tax problems. The sessions will start at 2 p.m. on Thursday, March 11, and will conclude at noon on Saturday, March 13. The registration fee of $25 will cover a luncheon on Friday, a reception and a copy of the proceedings. Advance registration cards can be obtained from Mr. Throckmorton at AMA headquarters, 535 North Dearborn Street, Chicago 60610.

Mayo Clinical Reviews

The 1965 Mayo Clinical Reviews will consist of identical sessions on March 15, 16 and 17, and on March 22, 23 and 24, at the Mayo Civic Auditorium, in Rochester, Minnesota. The program has been accepted for hour-for-hour credit by the American Academy of General Practice. The number of physicians who can be accommodated is necessarily limited. Those wishing to attend should communicate with Mr. M. G. Brataas, at the Mayo Clinic, indicating which session they would prefer to attend. The registration fee will be $10.

The Monday presentations will concern osteoporosis, management of nodular goiter, undescended testes, nasal infections, surgical problems of the ear, chemotherapy of gastrointestinal cancer, urinary-tract infections, aneurysms, pituitary-stalk resection for diabetic retinopathy, oral manifestations of systemic disease, common foot problems in children, use of closed-circuit television in radiologic diagnosis, rheumatology, pediatric urology, cancer of the lung, and anemia.

The topics to be discussed on Tuesday are chronic ulcerative colitis, multiple sclerosis, the unconscious patient, functional voice disorders, drug allergies, acute renal failure, injuries of the cervical spine, ENT office procedures, and problems of adolescents.

The Wednesday program will deal with ano-rectal abscesses and fistulae, vascular complications of pregnancy, fluothane and the liver, alopecia of the scalp, sleep disturbances, neurologic clues to systemic disease, hypersplenism, drug addiction, new developments in transfusion therapy, parathyroid disease, clues to occult malignant disease, eye manifestations of systemic disease, bleeders, and cor pulmonale.

Iowa Chapter of the American Academy of General Practice

Refresher Course for GP's

This is to alert all doctors of medicine that the finest refresher course in the Middle West is being offered at the University of Iowa Medical School February 16-19, 1965. If you miss it, you may regret it. Plan now to attend.

On Thursday, February 18, members of the Iowa Chapter will again be hosts to the sophomore and junior medical students and the participating faculty at a banquet to be held in the University Athletic Club, in Iowa City. The banquet will be preceded by oysters on the half-shell and keg refreshments, courtesy of Marion Laboratories. There will be special entertainment by a barbershop quartet, and the speaker following the banquet will be Dr. Donovan Ward, president of the American Medical Association.

Following is the program for the four days:

Tuesday, February 16

SURGERY

9:00 a.m. PANEL: ABDOMINAL CATASTROPHES
S. E. Ziffren, M.D., Moderator
J. A. Buckwalter, M.D.
R. D. Liechty, M.D.
E. E. Mason, M.D.

11:00 a.m. SPECIAL GROUP CONFERENCES
Dermatology—Open Discussion—R. G. Carney, M.D.
Neurology—Cerebral Vascular Diseases—A. L. Sahs, M.D.
Psychiatry—Post-Hospital Care of the Mental Patient by the Family Physician—Charles Shagass, M.D.

11:45 a.m. *Orthopedics*—Knee Injuries—A. E. Flatt, M.D.
Otolaryngology—Tricks in the Examination of the Ear, Nose and Throat—D. A. Shumrick, M.D.
Urology—Infertility and Intersex Problems—R. G. Bunge, M.D. and M. A. Immergut, M.D.

1:30 p.m. PANEL: HIATAL HERNIA
F. D. Staab, M.D., Moderator
J. A. Clifton, M.D.
J. L. Ehrenhaft, M.D.
H. W. Fischer, M.D.
R. T. Tidrick, M.D.

2:35 p.m. SPECIAL PRESENTATION—"The Role of the General Practitioner in Comprehensive Mental Health Care"—P. E. Huston, M.D.

3:35 p.m. PANEL: OCCLUSIVE DISEASE OF THE CAROTIDS—AN INCREASING PROBLEM
H. B. Locksley, M.D., Moderator
M. S. Lawrence, M.D.
G. E. Perret, M.D.
H. F. Pribram, M.D.
M. W. VanAllen, M.D.

Wednesday, February 17

OBSTETRICS & GYNECOLOGY

9:00 a.m. "Now What Do I Do?"—Obstetrics & Gynecology Staff

9:45 a.m. "The Significance of Hypertension in Obstetrical Patients"—W. F. Mengert, M.D.

10:15 a.m. CONCEPTION CONTROL
"Mechanism of Hormonal Suppression"—J. T. Bradbury, Sc.D.
"Current Medications"—J. P. Jacobs, M.D.
"Intra-uterine Devices"—R. M. Kretzschmar, M.D.
"Other Techniques"—C. A. White, M.D.

11:00 a.m. SPECIAL GROUP CONFERENCES
Dermatology—"Wierdo Skin Eruptions"—C. E. Radcliffe, M.D.
Neurology—"Cranial Nerve Disorders"—M. W. VanAllen, M.D.
Psychiatry—"Management of the Disturbed Geriatric Patient"—John Clancy, M.B., B.Ch.

11:45 a.m. *Orthopedics*—"Complications of Fractures"—Michael Bonfiglio, M.D.
Otolaryngology—"Ear, Nose and Throat Problems in General Practice"—Leslie Bernstein, M.D.
Urology—"The Abdominal Mass in Urology: Problems in Diagnosis and Treatment"—R. G. Bunge, M.D. and R. H. Flocks, M.D.

2:00 p.m. OBSTETRICAL ANALGESIA AND ANESTHESIA
"Value of Patient Education"—C. P. Goplerud, M.D.
"Pain Relief During First Stage"—L. J. Dunn, M.D.
"Pain Relief During Second Stage"—C. A. White, M.D.
"Anesthesia for Operative Deliveries"—W. C. Keettel, M.D.

2:45 p.m. "Estimation of Pelvic Capacity"—W. F. Mengert, M.D.

3:30 p.m. PROBLEMS OF HIGH RISK OBSTETRICAL PATIENTS
"Problems of Perinatal Mortality"—W. C. Keettel, M.D.
"What's New in Rh Sensitization"—C. P. Goplerud, M.D.
"Prevention of Prematurity"—W. F. Mengert, M.D.
"Teenage Obstetrics"—R. M. Kretzschmar, M.D.

4:15 GERIATRIC GYNECOLOGY
"Vulvar Lesions"—L. J. Dunn, M.D.
"Genital Prolapse"—W. C. Keettel, M.D.
"Endocrine Changes"—J. T. Bradbury, Sc.D.
"Postmenopausal Bleeding"—R. M. Kretzschmar, M.D.
"Medical Implications"—J. P. Jacobs, M.D.

8:00-9:30 p.m. MEDICAL MOVIES

Thursday, February 18

MEDICINE

9:00 a.m. "Nutritional Status of Teen Agers in Iowa" —R. E. Hodges, M.D.

9:20 a.m. PANEL: VITAMIN B_{12} AND FOLIC ACID DEFICIENCIES
H. E. Hamilton, M.D., Moderator
H. P. C. Hogenkamp, Ph.D.
R. F. Sheets, M.D.
J. L. Spratt, M.D., Ph.D.

10:20 a.m. "Drugs for Peptic Ulcer"—Elwood Buchman, M.D.

11:00 a.m. SPECIAL GROUP CONFERENCES
Dermatology—Assorted Dermatologic Problems—Open Discussion: R. M. Caplan, M.D.
Neurology—Demonstrations in Electromyography—R. W. Fincham, M.D.
Psychiatry—"The Rebellious Child"—R. L. Jenkins, M.D.

11:45 a.m. *Orthopedics*—"Open Fractures"—C. B. Larson, M.D.
Otolaryngology—"The Dizzy Patient"—B. F. McCabe, M.D.
Urology—Renal Hypertension: Problems in Diagnosis & Treatment
D. A. Culp, M.D., Moderator
M. A. Immergut, M.D.,
R. H. Flocks, M.D.
W. M. Kirkendall, M.D.

1:30 p.m. PANEL: BARBITURATE INTOXICATION
W. M. Kirkendall, M.D., Moderator
Jack Moyers, M.D.
G. L. Plaa, Ph.D.

2:40 p.m. "Treatment of the Diabetic Patient During Surgery"—D. B. Stone, M.D.

3:15 p.m. "Orthostatic Hypotension"—F. M. Abboud, M.B., B.Ch.

3:35 p.m. "Diuretics—New and Old"—G. B. Theil, M.D.

3:55 p.m. PANEL: NEW PENICILLINS AND OTHER ANTIBIOTICS—I. M. Smith, M.D. and J. R. Fouts, Ph.D.

6:00 p.m. Social Hour and Banquet—University Athletic Club
Speaker: Donovan F. Ward, M.D., president, American Medical Association

Friday, February 19

PEDIATRICS

FETAL AND NEONATAL PROBLEMS

9:00 a.m. "Research in the Causes and Prevention of Birth Defects"—Virginia Apgar, M.D.

9:30 a.m. QUESTIONS AND ANSWERS

9:45 a.m. "Diagnosis of Hidden Congenital Anomalies" —Virginia Apgar, M.D.

10:30 a.m. QUESTIONS AND ANSWERS

11:00 a.m. SPECIAL GROUP CONFERENCES
Dermatology—"Grafting of Leg Ulcers"—C. E. Radcliffe, M.D.
Neurology—"Headache Problems"—R. J. Joynt, M.D.
Psychiatry—Question the Psychiatrist. A panel of psychiatrists will answer questions regarding management of patients in general practice. P. E. Huston, M.D. and Staff

11:45 a.m. *Orthopedics*—"Fractures in Children—Problem Cases"—I. V. Ponseti, M.D.
Otolaryngology—"Dental Problems Encountered in the General Practice of Medicine"—W. H. Olin, D.D.S.
Urology—Problems in Pediatric Urology—R. H. Flocks, M.D. and D. A. Culp, M.D., Moderators
R. G. Bunge, M.D., M. A. Immergut, M.D.
J. C. Taylor, M.D. and G. M. Owen, M.D.

RESPONSIBILITIES OF THE FAMILY PHYSICIAN IN THE TREATMENT OF SCHOOL FAILURE

Part 1—Preventive Aspects of Treatment

1:30 p.m. "Genetic and Biochemical Bases of School Failure"—Hans Zellweger, M.D.

1:50 p.m. "Endocrine Bases of School Failure"—C. H. Read, M.D.

2:10 p.m. "School Phobias"—Theron Alexander, Ph.D.

2:30 p.m. "Sensory Bases of School Failure: Perceptual Problems"—A. L. Benton, Ph.D.

Part 2—Remedial Aspects of Treatment

3:25 p.m. "The Preschool Medical Evaluation"—J. C. MacQueen, M.D.

3:50 p.m. "The Physician and the School Problem"—Gerald Solomons, M.D.

4:20 p.m. QUESTIONS AND ANSWERS

Iowa Association of Medical Assistants

Is Certification Your Goal?

From October, 1955, to October, 1964, our national association has grown from 77 members to well over 12,000. Acceptance and endorsement of our aims and purposes by county and state medical societies and the American Medical Association has given impetus to our membership campaigns, but in addition we have had to offer concrete benefits to gain and maintain memberships.

In 1959 a special AAMA committee was appointed to develop a certification program. In May, 1962, the AMA contributed $1,000 to help get the program started. In October, 1962, and each succeeding year, Merck, Sharp & Dohme has given $5,000.

The certification examination is not a measure of present job performance; it is broader than anyone's actual experience and few people could be expected to pass it without some review of topics not recently studied in school, or not included in their work experience. We stress that this is an opportunity for the medical assistant (not necessarily an AAMA member) to upgrade her skills voluntarily. It is not a requirement for AAMA membership, nor is it a requirement for obtaining or holding a job as a medical assistant.

This year, examinations were scheduled in New York, Georgia, Oklahoma, Wisconsin and California. A news release from the AMA for Medical Assistants society bulletins, following the AAMA convention in Oklahoma City in October, announced that 37 medical assistants (31 of them AAMA members) qualified for certification in the June, 1964, examinations.

PURPOSE OF CERTIFICATION PROGRAM

1. To help physicians identify those qualified as top-level office assistants.
2. To establish professional standards and goals for medical assistants.
3. To assist schools and colleges in developing training programs for medical assistants.
4. To prepare and administer an annual examination.
5. To certify those who successfully complete the examination.

ELIGIBILITY REQUIREMENTS

The applicant for permission to take the certification exam must:

1. Be at least 21 years of age by Feb. 1 (deadline for application).
2. Be a High School graduate.
3. Have a minimum total of three years' experience in the office of a doctor of medicine, hospital or clinic.
4. Have had at least 12 months' continuous employment with one doctor, hospital or clinic.
5. Request present employer to submit brief letter of reference.

Because of the diversified nature of the medical assistant's work it was necessary to offer certification in two categories—medical assistant, administrative or clinical. The examination is divided into seven sections, and all candidates must pass the first three:

1. Medical Terminology, Anatomy and Physiology.
2. Personal Adjustment and Human Relations; Medical Ethics and Etiquette.
3. Medical Law & Economics.

For administrative certification sections 4 and 5 must also be passed:

4. Office Skills and Procedures; Accounting; Credits and Collections.
5. Written and Oral Communications; Records, Medical and Non-Medical.

For clinical certification, the first 3 sections and sections 6 and 7 must be passed.

6. Examination Room Technics; Sterilization Procedures; Care of Equipment; Immunology and Injections.
7. Laboratory Orientation (Urinalysis, Hematology, and Bacteriology), X-Ray, Electrocardiograpy, Basal Metabolism, and Physiotherapy.

Every candidate must take all five of the required sections on the first attempt. If she passes at least two sections, she has the privilege of repeating, in subequent years, only the sections failed, until she has passed all required sections. She may be certified in both categories if she desires and if she passes all seven sections.

A study outline of all sections of the examination, with a list of reference books, is available on request from the American Association of Medical Assistants, 510 N. Dearborn Street, Chicago, Illinois 60610. Single copies will be furnished without charge. Much can be accomplished by group study, either through chapter meetings or independent study clubs, whether medical assistants are working toward certification or merely for self-improvement.

Helen G. Hughes

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Gonorrhea—A Youth Problem

The total number of gonorrhea cases reported from all sources in the United States in 1963 is 278,289. This constitutes the largest number of reported cases since 1950. During the interval between 1950 and 1957, there was a steady decline, but starting with 1958, the number of cases reported has shown a trend upward.

In Iowa for the year 1964 it is projected that 1,700 cases* will be reported. This is in contrast to 596 in 1957, and 1,401 in 1960. Of the 1,700 cases* reported there were divulged, through interview 2,428 contacts* for the first 10 months of whom 82 per cent were brought to examination. Of those examined, approximately 50 per cent were treated.

Surveys conducted reveal that gonorrhea is poorly reported, but from the reported cases we have established that the high incidence is among youth (see chart).

It has been found that in many cases female patients have not responded to the lesser amounts of penicillin previously recommended. A minimum of 2,400,000 units of penicillin is currently being recommended as adequate therapy. In the male 1,200,000 units is recommended as minimum adequate therapy. Aqueous penicillin is still the drug of choice in the treatment of gonorrhea.

To curtail gonorrhea, we are stressing more complete case reporting by the private physician and are attempting more complete follow up of sex contacts.

The number of cases of gonorrhea reported each year in the United States since 1941 (exclusive of known military cases) is represented in the first table. The peak incidence of 415,855 cases was reached in 1946. In the past decade, the number of cases has ranged from 214,872 to 278,289. The number of cases recorded in 1963 was the largest number reported since 1950.

As shown in the second table, the highest rate is found in the age group 20-24 years. Increased numbers of cases were recorded in all age groups in 1963 as compared with 1962.

This material is taken from Morbidity and Mortality Weekly Report of the United States Department of Health, Education and Welfare, October 23, 1964.

* Projected totals based on 10 months operation.

REPORTED CASES OF GONORRHEA*
EXCLUSIVE OF KNOWN MILITARY—1941-1963

Calendar Year	Number of Cases
1941	198,691
1942	243,555
1943	290,455
1944	288,111
1945	313,363
1946	415,855
1947	380,666
1948	345,501
1949	317,950
1950	286,746
1951	254,470
1952	244,957
1953	238,340
1954	242,050
1955	236,197
1956	224,687
1957	214,872
1958	232,818
1959	240,254
1960	258,933
1961	264,158
1962	263,714
1963	278,289

* Alaska and Hawaii included since 1956.

REPORTED CASES OF GONORRHEA*
UNITED STATES—1962 AND 1963

	1962	1963	
Age Group	Number of Cases	Number of Cases	Cases per 100,000 Pop.
0-14	3,881	4,048	6.9
15-19	51,679	54,509	361.9
20-24	91,591	98,541	853.0
25-29	53,298	54,543	517.2
30-39	46,153	47,742	205.9
40-49	12,816	14,352	61.7
50+	4,296	4,554	10.3
Total	263,714	278,289	149.2

* Exclusive of known military cases.

Recommended Schedule for Immunizations

A. Children, 0-18 years. (The following is in accordance with the Report of the Committee on Immunizations, American Academy of Pediatrics.)

Disease	First Dose	Number of Doses	Boosters
Diphtheria Whooping cough Tetanus	6 weeks to 2 months	3 injections 1 month apart	At 1 yr. and again before entrance into school. For children beyond the age of 6, give diphtheria-tetanus boosters every 5 yrs.
Poliomyelitis	6 weeks to 3 months	SALK 3 injections 6 weeks apart, 4th after 6 months or longer (or) SABIN Monovalent 3 oral doses 4 to 6 weeks apart (or) SABIN Trivalent 2 oral doses 8 weeks apart	Every 2 years, as recommended by physician At about 1 year, as recommended by physician
Smallpox	6 to 12 months	1 vaccination	Every 5 years, and if exposed
Measles	9 months	"Live" Type 1 injection, usually accompanied by an injection of gamma globulin (or) "Killed" Type 3 injections—1 month apart	May not be necessary As recommended by physician

WE CANNOT SUGGEST TOO STRONGLY THAT ALL PEOPLE KEEP A PERMANENT RECORD OF THE TYPES AND THE DATES OF ALL IMMUNIZATIONS THAT THEY HAVE RECEIVED.

B. Adults.

Smallpox—Vaccination every five years or upon exposure. To meet U. S. passport requirements, vaccinations (or revaccinations) must have been done within three years of the date of re-entry into the United States. Every vaccination should be observed by the physician at least once (on about the seventh day) to see whether it is successful. A vaccination should not be repeated until at least two weeks have passed.

Tetanus—The original series of injections consists of two 0.5 cc. doses intramuscularly, at four to eight week intervals, followed by a third about a year after the second. A booster injection of 0.5 cc should be given promptly after any injury, or with surgical work on old wounds. To maintain protection, boosters should be given at five-year intervals.

Diphtheria—For adults, use only toxoids labelled *for adult use*. Use in combination with tetanus following the schedule given above for tetanus.

Typhoid—(including Paratyphoid A & B)—The primary series is three, 0.5 cc doses given subcutaneously at intervals of no less than seven days and preferably no longer than one month apart. In areas of low typhoid incidence, a booster dose of 0.5 cc should be given every four years. Although Iowa has no areas of high typhoid incidence, certain occupations offer high possibilities of exposure. In these the first booster should be given about a year after completion of the original immunizing series of doses. Subsequent boosters can be given every two years.

Influenza—For persons who have not had the vaccine within the preceding two years, two 1 cc doses are needed. Give subcutaneously, with a four to eight week interval between doses. Those who have had more recent immunizations need only one 1 cc injection. Start immunizations in late September or early October.

Poliomyelitis—Physicians who hesitate to use the Sabin vaccine for primary immunizations in adults may use the Salk vaccine. Follow the schedule for children.

The immunizations described here are those recommended for Iowans in Iowa. With few exceptions, such as the need for Rocky Mountain Spotted Fever vaccine for persons whose work may take them to certain areas, these immunizations are adequate for the entire United States. Other immunizations are needed for travel outside of the United States. These may be obtained by requesting our sheet entitled, "Immunizations for Overseas Travel."

American Diabetes Association

The American Diabetes Association will conduct its Twelfth Postgraduate Conference, on January 20, 21 and 22, at the Drake Hotel, in Chicago, in cooperation with the Diabetes Association of Greater Chicago. The faculty will consist of 32 outstanding authorities.

Wednesday morning, January 20, will be devoted to four lectures on various aspects of diabetes, metabolism and endocrine interrelations. The Wednesday afternoon lectures will deal with latest knowledge of the islands of Langerhans, and reviews of current studies on insulin and insulin-like activity.

The Thursday morning session, January 21, will include a talk on "The Pregnant Diabetic and Her Child." Other lectures that morning will deal with prediabetic manifestations, the treatment of emergencies in diabetes, diabetic ketoacidosis and lactic acidosis. On Thursday afternoon, Arthur R. Colwell, Sr., M.D., will deliver the eighth annual Woodyatt Memorial Lecture on "Milestones of Progress in Diabetes." Following that, there will be discussions of the effects of drugs on blood glucose, management of the ambulatory patient and the present status of oral therapy.

A symposium on the disorders of lipid metabolism, and discussions on urinary-tract infections and on diabetic neuropathy will take place on Friday morning, January 22. Friday afternoon, the topics will be various aspects of diabetic vascular disease, endocrine ablation in the management of diabetic retinopathy, and the relation of small blood vessel disease to the treatment of diabetes.

The course has been accepted for postgraduate-study credit by the AAGP. The fee will be $40 for members of the Diabetes Association, and $75 for nonmembers. For additional information, write to the American Diabetes Association, 18 East 48th Street, New York City 10017.

Dried Milk Can't Contain Vitamins

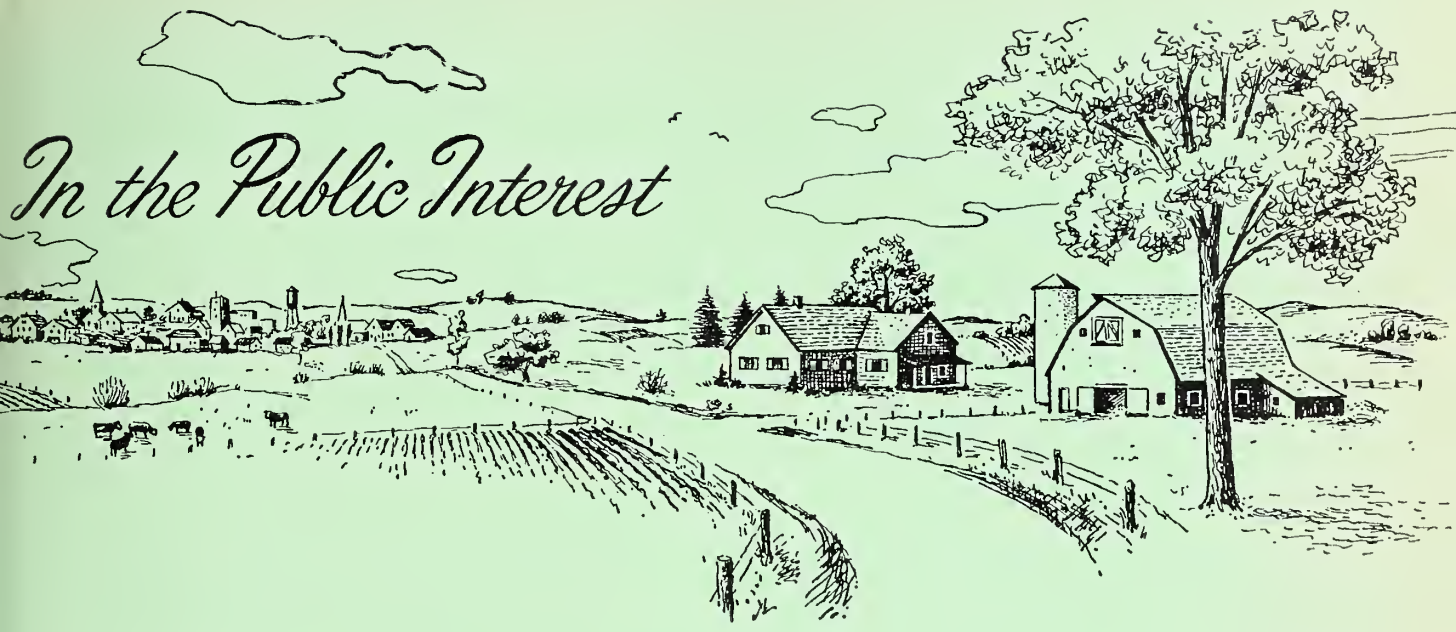
An Act of Congress, because of an oversight, forbids the sale of nonfat dry milk with vitamins A and D added. This was pointed out in a column by Philip L. White, Sc.D., secretary of the AMA Council on Foods and Nutrition, in the December issue of TODAY'S HEALTH.

The Standards of Identity for nonfat dry milk, as established by Congress in 1944, failed to permit fortification with those vitamins. Milk is relied upon to provide all of our daily requirements for vitamin D and much of our supply of vitamin A, Dr. White pointed out. Moreover, because a considerable amount of nonfat dry milk is distributed in relief and school lunch programs, the very segments of our population that most need adequate sources of vitamins A and D are being partially deprived.

The technological barriers to the fortification of nonfat dry milk have been overcome, he concluded. Only legal barriers remain as obstacles to hurdle.

Morbidity Report for Month of November 1964

Diseases	1964 Nov.	1964 Oct.	1963 Nov.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	282	316	257	Johnson, Polk
Typhoid fever	0	1	0	
Smallpox	0	0	0	
Measles	39	19	37	Polk
Whooping cough	4	10	8	Cedar, Hamilton, Pottawattamie
Brucellosis	11	3	7	Dubuque, Scott
Chickenpox	507	161	135	Clay, Des Moines, Dubuque, Polk, Woodbury
Meningococcic meningitis	1	2	0	Hamilton
Mumps	236	210	709	Cass, Des Moines, O'Brien, Pottawattamie, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	56	47	19	Carroll, Cerro Gordo, Polk, Scott
Rabies in animals	25	33	24	Dickinson, Hancock
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	27	38	25	For the state
Syphilis	59	106	52	For the state
Gonorrhea	224	233	103	For the state
Histoplasmosis	2	1	1	Calhoun, Mitchell
Food intoxication	13	209	25	Story
Meningitis (type unspecified)	3	4	3	Buchanan, Marion, Polk
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	1	0	
Salmonellosis	9	10	4	Johnson, Linn, Polk
Tetanus	0	1	2	
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	3	0	Linn
H. influenzal meningitis	0	1	0	
Amebiasis	1	2	6	Polk
Shigellosis	3	5	6	Buena Vista, Johnson, Polk
Influenza	0	125	318	



Medical Progress Has Been Rapid

What would you—what, indeed would anybody—think of a young general practitioner who used no penicillin or other antibiotics; who never worried about the Rh factor in pregnant women or the possible need for replacement transfusions in newborn infants; who never gave his young patients tetanus toxoid or polio vaccine; who never prescribed tranquilizers; who could diagnose congenital heart defects but never advised corrective surgery; and who never counseled his patients to buy health insurance?

The man just described was a thoroughly trained and completely qualified physician, and the time was just 35 years ago, when he started his medical practice. In those and other respects he was identical with the other doctors of his generation, most of whom are still engaged in practice and who have helped to develop and to apply the better materials and technics that are now in general use.

It's by examples such as this that recent medical progress can be brought home to us most forcibly. The communicable diseases that once were major killers—tuberculosis, diphtheria, pneumonia, typhoid, smallpox, poliomyelitis, scarlet fever and many others—still exist and occasionally become epidemic in other parts of the world. But in America they are under control and will remain so if people will heed their doctors' advice and keep their immunizations current.

During the 25 years between 1935 and 1960, the life span of the average American was lengthened from 61.7 years to 69.7 years, and in the four most recent years it has exceeded the Biblical quota of "three score years and ten." Some of that lengthening was accomplished, of course, by a lowering of the death rate for newborns from 55.7 to 25.7 per 1,000 live births between 1935 and 1960. But even more remarkable reductions were achieved, during the same period, in death rates for various groups of adults. The mortality for women at childbirth, for example, was cut from 5.8 to 0.32 per 1,000 live births per year, and tuberculosis—predominantly a disease affecting adults—disappeared from the list of 10 most frequent causes of death.

Partially by a process of elimination, heart disease and cancer have attained prominence as major medical problems. They, along with ailments such as mental diseases, congenital malformations, arthritis and the late complications of diabetes, are problems that affect large numbers of people who would have succumbed earlier in life if specific cures for infections of various sorts had not been discovered. Yet these degenerative diseases aren't being regarded as merely the unfortunate consequences of the additional years that Americans have been given. Instead, medical men are attacking them vigorously, and are making progress in saving patients from them.

Diseases of the heart and circulatory system are being diagnosed through x-ray technics, sometimes before they have caused serious difficulty, and they are being remedied with increasing frequency by means of artery or vein grafts or by means of anticoagulants. Cancer, especially when it has been detected early, is being cured by surgery or therapeutic x-ray. Birth defects are being corrected surgically. The pain from arthritis is being alleviated, and the crippling conditions that

it sometimes causes are being corrected surgically. Larger and larger numbers of mental patients are being treated and rehabilitated.

In the first four years of the 1960's, medical progress has been just as rapid as it had been in the previous 25. A pair of measles vaccines, just perfected, are expected to save children not just from measles but from the encephalitis that frequently follows it. Advances have been made toward the discovery of preventives for two of the diseases that cause blindness. Severed limbs have been reattached and restored to usefulness. Organ transplants are being attempted. One seldom picks up a newspaper without finding an announcement of a promising medical or surgical advance. We hope we can be pardoned for saying that the medical profession has done and is doing a spectacularly good job.

PHYSICIANS DESERVE THE PUBLIC'S CONTINUED CONFIDENCE

It isn't strange that the American people and their lawmakers are anxious to speed medicine's advance, to make all procedures available to everyone without financial sacrifice, and to prevent medical men from making any mistakes. But they should be careful to assist rather than impede the physicians who have achieved so much and who deserve their continued confidence.

First, let's consider the accelerating of research. Currently it is proposed that Congress should finance crash programs to find causes and cures for heart disease and cancer. It is by no means certain that tremendous sums of additional money will speed this work appreciably, since the current and the proposed investigative projects seem satisfactorily financed by existing means. There is a real danger, at our medical schools, that if money seeks investigators, the teaching of medical students may take second place after research. A proper balance needs to be maintained.

Until recently, the American drug manufacturers were in the forefront in the testing and introduction of new medications. Then came the Thalidomide episode. It was a serious mistake, and the pharmaceutical industry regretted it as much as did the government and the rest of us, and was prepared to prevent recurrences. But it wasn't really given a chance to do so. Congress stiffened the requirements for new-drug testing and licensing to such an extent that several firms have begun moving their research activities to Europe, where their facilities perhaps will be less than ideal but where they will have the freedom that they feel they need. For that reason, and also because the U. S. Food and Drug Administration is inadequately financed and staffed, Americans can expect at least a year or two of delay in getting future "miracle" drugs. Besides, by sanctioning imports of antibiotics from Italian pirate firms and by permitting the Armed Forces and other federal agencies to purchase antibiotics from those sources, our government is a party to massive patent infringements that are sure to discourage American pharmaceutical manufacturers from making further expenditures for research.

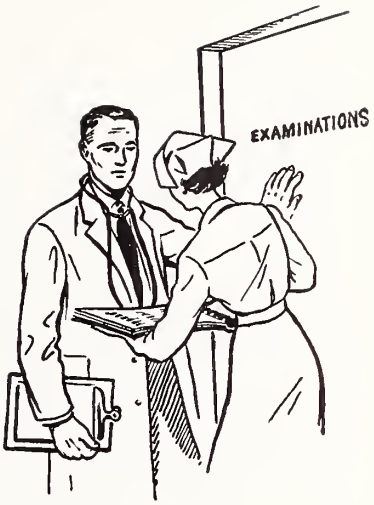
Next, let's consider technics intended to lighten or remove the financial burden from those who are least able to bear it. Here again, the objective is an attractive one, but a reckless pursuit of it could produce difficulties. Iowa, like many other states, has long had its University Hospitals where the so-called "medically indigent"—people of all ages having insufficient means with which to pay for treatment—have been given needed attention, partially or wholly at state and county expense. For several years, this program has been supplemented by the older "categorical assistance" programs (Old Age Assistance, Aid to Dependent Children and Aid to the Blind) in which the federal and state governments share the costs. In addition, physicians and local hospitals have provided care free of charge or at reduced rates, throughout the years, for people who for one reason or another couldn't qualify for governmental programs. Now, for about a year, Iowa along with many other states (about 40 of them) has had a Medical Assistance for the Aged (Kerr-Mills) program under which the federal and state governments assure health care to the economically-marginal elderly. In Iowa, MAA provides hospitalization, nursing-home care after a hospital stay, physicians' and surgeons' services, drugs, dentistry, and prosthetic appliances to everyone over 65 years of age who satisfies the rather lenient eligibility requirements.

These programs are meeting the needs satisfactorily. An addition such as the King-Anderson proposal, which would make hospitalization and nursing-home care available to all OASI beneficiaries at government expense, would simply eliminate the "means test," and the additional expense for the taxpayers of providing services to those fully able to pay would be astronomical. Furthermore, though the bed capacities of our hospitals and nursing homes are currently adequate, and though our supply of physicians is fairly good, there aren't hospital and nursing-home accommodations and there isn't enough physicians' time for the thousands of additional patients who would avail themselves of such services if they were "free."

CONCLUSION

The advances that the medical profession and its paramedical associates have achieved during the past 29 or 30 years constitute a splendid record of progress—progress motivated by a constant desire to save lives and to aid the sick and the disabled. There are many medical problems that remain to be solved, and everyone can be certain that medicine will continue striving to find thoroughly satisfactory answers for them.

THE DOCTOR'S BUSINESS



Choose a Home That's a Sound Investment

HOWARD D. BAKER
Waterloo

If someone were to tell you that the difference in cost between a $35,000 residence and a $70,000 residence can amount to $130,000, you would be inclined to think that he had completely lost his wits. However, he would be right!

Over the past several years, we have noted an ever-increasing trend toward bigger, more costly homes—far too frequently at the expense of a sound overall financial plan for the purchaser. Just how much "status symbolism" may be involved in these ultra-expensive homes is hard to determine, but it is immediately obvious that they reflect an objective other than adequate housing.

Too frequently, the size of investment in a residence is governed by the size of the monthly mortgage payments. If the payments can be supported, the total cost is often disregarded. Rarely does the prospective buyer measure the true and complete cost of a *luxury house* against that of an *adequate home*.

In an effort to measure this cost, we recently studied the financial aspects of owning homes priced at various levels. In the following example we have assumed that our client is in the top tax bracket (40 per cent), and is considering the purchase of one of three homes costing, respectively, $35,000, $50,000 and $70,000. He has $15,000 for equity.

	House A	House B	House C
Total Cost	$35,000	$50,000	$70,000
Cash for Equity	15,000	15,000	15,000
Mortgage Balance	$20,000	$35,000	$55,000
Monthy Mortgage Payment	$ 143.29	$ 250.76	$ 394.10

(20-year, 6 per cent mortgage)

At this point, the doctor feels he can support the $394.10 monthly payment, but he wonders what other factors may be involved:

	Estimated Annual Difference House B Over House A	House C Over House A
Annual Mortgage Payment	+ $1,300	+ $3,000
Additional Property Taxes	+ 400	+ 1,200
Additional Maintenance	+ 100	+ 500
Estimated Annual Difference	+ $1,800	+ $4,700

Here, as compared with House A, he discovers that House B will require about $150 per month more in cash outlay, and that House C will require nearly $400 more. And these differences don't include the costs of additional and more expensive furniture, additional domestic help, and the inevitable increases in the overall costs of living in a luxury home.

The doctor is impressed at this point, but our comparison has only begun. What would his savings amount to if he were to invest them wisely in a productive medium? The cost differential between House B and House A was $1,800 per year, but that includes interest and taxes which are deductible and result in tax savings. The *after-tax* difference would be $1,425 per year. If that amount were invested to yield and appreciate at 6 per cent, the net after-tax performance would be about 3½ per cent, and the accumulation would amount to $43,500 over the 20-year mortgage period.

The cost differential between House C and House A would be $4,700 before tax, or $3,700 after tax. This sum, invested as previously stated, would grow to $104,000 over the 20-year period.

If we were to make the very liberal assumption that these homes will retain their original valuations or will depreciate proportionately, the loss from purchasing House B rather than House A would be $43,500 less $15,000 (the cost differential), or a *net loss* of $28,500. The loss incurred by purchasing House C rather than House A would be $104,000 less $35,000 (the cost differential), or

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

a *net loss* of $69,000. Extending the period of ownership from 20 to 30 years would increase the net loss on House B to about $50,000, and the net loss on House C to about $130,000.

These figures give dramatic emphasis to our contention that excessive spending on a residence can seriously lessen one's chances of achieving a reasonable degree of financial security. These figures also point out the logic of measuring the long-term effect of one's commitment in a residence, rather than basing one's decision simply on the size of the monthly mortgage payment.

There are various "rules of thumb" for measuring the amount which one should invest in a home, but we believe that a proper decision can be made only after a study of the individual's specific financial circumstances. For example, a doctor earning $30,000 might have debt and a family situation that should limit his home cost to $25,000, but another earning $30,000 who has just inherited $100,000 could reasonably spend $50,000.

In the absence of unusually favorable circumstances such as a sizeable inheritance or outstanding investment success, on the one hand, or of adverse circumstances such as bad health or heavy liabilities, on the other, the following guide is probably reasonable for the *average* doctor:

Annual Income Before Taxes	Reasonable Value for Residence	Maximum Mortgage
$ 20,000	$25,000	$20,000
30,000	30,000	20,000
40,000	35,000	25,000
50,000	40,000	25,000
60,000	45,000	25,000
70,000	50,000	30,000
80,000	55,000	30,000
90,000	60,000	30,000
150,000	75,000	35,000

In addition to the value of the residence, the matter of maximum mortgage is quite important. The farther one advances into luxury-type homes, the greater the ratio should be of equity to debt. This maxim is based upon our philosophy of purchasing luxuries with *previously accumulated funds,* rather than with *future earnings.* Following this guide for total cost and maximum mortgage will also assure the doctor an adequate residue of funds for use in accumulating income-producing assets.

SUMMARY

It has been our experience that over-commitment for a residence can cause more financial problems than any other single phase of financial planning. When one purchases a residence, he should consider all factors objectively, and make his final decision on the basis of financial logic rather than pure desire. Once he has made a final decision, he will have to live with it for many years.

Sioux Valley Medical Association

The Seventieth Annual Meeting of the Sioux Valley Medical Association will be held in Sioux City on February 18 and 19, 1965. The Thursday morning program will be at St. Vincent's Hospital, and the Thursday afternoon and Friday sessions will be held at the Sheraton-Warrior Motor Inn.

Thursday, February 18

Morning Session, St. Vincent's Hospital

9:00 a.m. "The Ultrastructure of the Kidney"—Earl B. Scott, Ph.D., professor of anatomy, University of South Dakota School of Medicine

9:30 a.m. "Recent Concepts of Kidney Function"—Willard O. Read, Ph.D., professor of physiology, University of South Dakota School of Medicine

10:30 a.m. "Clinical Application of Cobalt Therapy"—C. M. Marriott, M.D., and W. S. Thoman, M.D., Sioux City

11:00 a.m. "Indications and Clinical Uses of the Artificial Kidney"—George G. Spellman, M.D., Sioux City
"Arteriovenous Shunt for Intermittent Dialysis"—Ahmad Akbari, M.D., Sioux City

Afternoon Session, Sheraton-Warrior Hotel

1:30 p.m. MOVIE: "Complete Office Gynecological Examination"—Frederick J. Hofmeister, M.D., Milwaukee

2:00 p.m. "Geriatric Gynecology"—Leon S. McGoogan, M.D., professor of obstetrics & gynecology, University of Nebraska

2:30 p.m. "Physical Problems in Adolescence"—Bryan Oberst, assistant professor of pediatrics, University of Nebraska

3:30 p.m. "Present Day Management of the Menopause"—Dr. McGoogan

4:00 p.m. "Social and Psychological Problems in Adolescence"—Dr. Oberst

5:30 p.m. SOCIAL HOUR AND DINNER, Sheraton-Warrior
"Medical Quackery"—Mr. Oliver Field, Chicago, AMA Investigative Division

9:00 p.m. DANCING

Friday, February 19, Sheraton-Warrior Hotel

9:00 a.m. MOVIE: "Forty Causes of Abdominal Pain"—Higer Perry Jenkins, Chicago

9:30 a.m. "Halothane and Shock"—Max Sadove, M.D., professor of anesthesiology, University of Illinois Medical Center, Chicago

10:00 a.m. "Hematuria"—William Bowles, M.D., St. Louis

11:00 a.m. "Modern Clinical Management of Diabetes Mellitus"—E. A. Hounz, M.D., chairman, Department of Medicine, University of North Dakota School of Medicine

1:00 p.m. MOVIE: "Medical Genetics I"

1:30 p.m. "Shock and Its Management"—Dr. Sadove

2:00 p.m. "Nose and Throat Problems in Relation to General Practice"—E.E.N.T. Academy

3:30 p.m. "Urological Cancer"—Dr. Bowles

Woman's Auxiliary News

Thoughts From the President

As we begin a new year, it seems appropriate for each of us to pause for a few moments to reflect upon the importance and meaning of being an Auxiliary member, and to examine anew the purpose of our many activities.

When the members of the House of Delegates of the Iowa Medical Society had voted permission, on Friday, May 10, 1929, for the wives and daughters of IMS members to organize a Woman's Auxiliary, they requested the newly-elected president of the organization, Mrs. M. Nelson Voldeng, of Woodward, to give her personal views concerning the group's purposes, scope of activity and goals.

Mrs. Voldeng began by telling them of the pleasure she had experienced in attending her first meeting of the Women's Auxiliary to the American Medical Association, in Minneapolis during the previous year. She spoke of the thrills she had had and of the benefits she had received in meeting and talking with physicians' wives from all over the United States. Wives of small-town doctors, women who were newlyweds, and women who had long been active community leaders—all had the same problems and concerns. They had mutual interests and a mutual desire to contribute to their husband's profession.

Further, she told how deeply she had been impressed by the democratic processes of the National Auxiliary—by the fact that each physician's wife had an equal opportunity to express her opinions on all matters. Then Mrs. Voldeng said that she and the few other Iowa physicians' wives, as they made new acquaintanceships and learned more of the successful working of the organization, began to ask themselves the question, "If the Auxiliary is helpful to these women and their doctor husbands in other states, why is it not the thing for Iowa women?" Doctors in other states, they felt sure, had no more loyal, enthusiastic and helpful wives than the medics in Iowa. And so the idea of organizing a State Auxiliary in Iowa was discussed pro and con, in a new light and with new interest, by physicians and physicians' wives.

The principle that each member must have an equal voice, which had so impressed Mrs. Voldeng when she attended her first AMA Auxiliary meeting has been preserved throughout the 36 sessions of the Iowa Auxiliary's House of Delegates. The constituent Auxiliaries choose delegates on the basis of one delegate for each 25 dues-paying members or major fraction thereof, and in addition the president of each county Auxiliary and the elected or appointed officers and chairmen of State standing committees are *ex officio* delegates. Except for a brief period during World War II, the Auxiliary's House of Delegates has convened annually, at the time of the Auxiliary's Annual Meeting, to transact all business of the State Auxiliary.

To make sure that members are informed regarding policies, revisions of the By-Laws, recommendations of the Board of Directors, etc., county Auxiliary presidents are voting members of the Auxiliary Board, and copies of the Board's minutes are mailed to the presidents of all constituent Auxiliaries, and copies of information sent from the National Auxiliary are sent to county Auxiliary presidents and committee chairmen. Well in advance of the Annual Meeting of the House of Delegates, information concerning business to be transacted is sent to each county Auxiliary president, and thus each county Auxiliary is apprised of the issues that will be considered, and can instruct its chosen delegates as to how the membership wishes them to vote.

At the first Annual Meeting of the Woman's Auxiliary to the Iowa Medical Society, the following objectives were accepted:

To extend the aims of the medical profession through the women members of families of physicians

To cooperate with other organizations which look to advancement in health education

To further health activities and to speak in the best interests of medicine

To increase unity and harmony among doctors' families

To create, through good fellowship and understanding, an organization that will make for better service and happier lives.

Mrs. Voldeng's slogan: "Every wife, mother, daughter, sister, widow of a physician a member of Auxiliary, and an organized Auxiliary for every county medical society."

Through the years we have grown, both in membership and in the scope of our activities and responsibilities. Our reason for being, and the purpose and importance of our activities have not changed. They have only gained in stature.

The privilege of having the Woman's Auxiliary to the Iowa Medical Society was given to us by our physician husbands, and in giving us this organization they paid us the highest compliment that wives can receive—the compliment of being wanted and needed.

—JANET ELLIS

Helping Hands Reach Around the World

The "International Health Activities Committee" serves as a means of creating peaceful relations all over the world. We can continue sending medical supplies to disaster areas ONLY if the supply depots are well stocked at all times. It is our job to see that adequate stocks of supplies are available at the depots when disaster strikes, for use in emergencies throughout the world.

Sample drugs, medical supplies and emergency equipment can be sent from this area to:

World Medical Relief, Inc.
479 West Columbia Street
Detroit 1, Michigan

or

The People to People Health
Foundation, "Project Hope"
208 South LaSalle Street
Chicago, Illinois 60604

Congratulations to the county Auxiliaries for the fine response to the "Johnny Coats," made from men's discarded shirts. This project has certainly gone over in a big way.

I would appreciate reports from each county auxiliary on its activities toward "International Health" by *January 15.*

REMEMBER—"Helping Hands reach around the World."

HELEN RALSTON (MRS. F. P.)
Chairman, International Health Activities

Report From the Legislative Chairman

The private practice of medicine seems actually to be a prime military target for the socialists. The contrast between countries where medicine is socialized and countries like ours, where we enjoy private practice, is very great. I believe it is well worth fighting to preserve America as the bastion of private practice. American medicine is the most advanced in the world.

This summer my mother, my daughter and I spend several weeks in Denmark. As many of you know, I am much concerned about government. This concern, plus my ability to speak some Danish and an opportunity to live for a time in a Danish home, brought me some interesting observations

1. Did you know that the Danish government's sales tax on an automobile is 100 per cent? That means that for every $1,000 that a Dane pays for a car, he must pay his government an additional $1,000. Our relatives—of middle income, not in government employ—have never owned a car. They couldn't afford to accept one as a gift, for even a gift car is subject to tax in an amount equal to its full value.

2. A tax of 48 per cent on earnings is not uncommon. Our Danish family pays at fixed intervals when income is received. Danes do not file and pay just at the year's end.

3. So many Danes are dependent on the government for their livelihood that there is no hope of voting the socialists out of office.

4. If our foreign aid were to be denied to the Danish socialists, Denmark might have a chance to be free. The enormous taxes are insufficient to meet the nation's bills.

Danes still have America as their escape hatch to freedom. If America adopts socialism as her economic scheme, there will be pitifully few, if any countries where we can escape to freedom. It will be sad indeed if America fails to realize that private enterprise, not socialism, is her key to success. That is the pearl of freedom, the holy grail which all too few seem to have discovered.

—MRS. R. F. NIELSEN

Annual Foreign Student Weekend

The annual Foreign Student Weekend is scheduled for January 29 and 30, 1965. Since many of the students will be housed in private homes, a helpful booklet entitled "Entertaining Foreign Guests"—a handbook for families, is available. This informative booklet was written by Mrs. W. Wallace Maner, hostess, International Center, University of Iowa, Iowa City, Iowa, and is available from her at 10 cents per copy.

To the Physician's wife who would enjoy entertaining a foreign student, but who feels inadequate or ill-prepared in international etiquette, this booklet will serve as a helpful guide in the "Do's and Don'ts."

Following are a few interesting excerpts:

"ALWAYS approach such entertaining in the spirit of LEARNING rather than TEACHING."

"Delay political and religious discussion until you are very well acquainted."

"Do not feel that conversation must flow freely through the entire meal."

"At the table, SET AN EXAMPLE. You can even say something like, 'I think that with this chicken we will simply have to use our fingers.' TAKE A SECOND HELPING yourself, and thus make it comfortable for the guest to do so, if he wishes."

"Do not read extensively about his country and then feel you are an authority. It is better to know

little and admit it, than to know too much from a wrong or unreliable source."

The Polk County Society and its Woman's Auxiliary will serve as hosts to the foreign medical students, and students in allied medical fields attending this event.

"Auxiliary Activities Around the Hawkeye State"

Black Hawk County

The Black Hawk County Medical Auxiliary held its November meeting in the home of Mrs. Thomas Thornton for a holiday dinner. Hostesses for the evening were Mesdames Craig Ellyson, Gardner Phelps, Robert Miller and Thomas Trunnell.

Mrs. Rohlf Kruse gave a demonstration on making Christmas decorations. These were sold at a "silent auction," and the proceeds were donated to the AMA-ERF fund.

MRS. LOUIS WINNINGER
Publicity Chairman

Boone County

Boone County Auxiliary is proud of its 100 per cent membership. Our success in attaining this achievement is attributed to personal contact, and endeavoring to make meetings and projects of sufficient interest and value to attract all the doctors' wives. Notices of meetings, and reminders of dues, are sent by mail.

We are especially proud that the four widows of deceased doctors in the County are valued members. They attend all meetings and social events as regularly as their health or trips out of town permit.

HELEN LONGWORTH
President

Cerro Gordo County

The November meeting of the Cerro Gordo Medical Auxiliary was held at the Pancake Inn, with Mrs. C. O. Adams presiding.

A report on the success of the Health Careers Day for high school students in Mason City and vicinity was given by Mrs. A. E. Hale. Seventy-nine students from 13 townships participated in the day long event, touring medical facilities and obtaining information on allied medical careers.

Mrs. Adams, president, expressed her appreciation to Mrs. Hale and Mrs. G. T. Joyce and their committee for the well-planned program, and to the staffs of the Mercy and Park hospitals for their cooperation in making the project a success.

Mrs. Adams reported on the fall board meeting of the Woman's Auxiliary to the Iowa Medical Society held in Des Moines.

Following the business session, Mrs. T. R. Davidson, Mental Health Chairman, conducted the members on a tour of the North Iowa Mental Health Center, after which Dr. Miles Pothast, clinical psychologist, spoke to the group.

Mahaska County

The Mahaska County Auxiliary held its November meeting at the Dutch Buffet in Pella. Mrs. L. J. Grahek presided for the brief business session.

Mrs. K. M. Lemon, Mrs. G. S. Atkinson and Mrs. Loren Allaman were appointed to the nominating committee.

Plans were completed to assist the Mahaska County Hospital Auxiliary by furnishing a pie each week for the "Snack Bar."

Polk County

The Woman's Auxiliary to the Polk County Medical Society held its regular meeting on Friday, November 13. Luncheon was served at the new Iowa Methodist Hospital Nurses Home, and the meeting was held in the auditorium there. After the business meeting, the film on suicide prevention, "Cry for Help," was shown, following which Dr. Richard Preston, of Des Moines, conducted a question and answer period which provoked a great deal of interest among those present.

On November 21, Auxiliary members joined their husbands at a combined meeting of Polk County Medical Society and Mercy Hospital Day, held at Hotel Fort Des Moines. After a social hour and dinner, we were privileged to hear a most interesting talk by Dr. Mason Ladd, dean of the College of Law, University of Iowa. His address, "The Philosophy of Current Day Medico-Legal Problems," was followed by a question and answer period. This well-attended meeting was greatly enjoyed by all Auxiliary members.

MRS. J. H. MCNAMEE
Publicity Chairman

Woodbury County

Early in November, the Sioux Med-Dames, auxiliary of the Woodbury County Medical Society, co-sponsored with the Iowa Society for Crippled Children and Adults, their annual sale of articles made by Iowa's handicapped persons. The Younker-Martin Store in Sioux City cooperated by furnishing space for the sale. The proceeds from the sale are returned to the handicapped persons who made the articles.

Mrs. A. W. Horst was general chairman, and she was assisted by Mrs. A. W. Horsley in staffing the sale; Mrs. M. A. Blackstone and Mrs. A. T. Engelmann were the cashiers; and Mrs. L. H. Boggs and Mrs. W. S. Thoman were in charge of publicity.

An American Creed

by
DEAN ALFANGE

I do not choose to be a common man. It is my right to be uncommon . . . if I can.

I seek opportunity . . . not security. I do not wish to be a kept citizen, humbled and dulled by having the state look after me. I want to take the calculated risk; to dream and to build, to fail and to succeed.

I refuse to barter incentive for a dole. I prefer the challenges of life to the guaranteed existence; the thrill of fulfillment to the stale calm of Utopia. I will not trade freedom for beneficence nor my dignity for a handout. I will never cower before any master nor bend to any threat. It is my heritage to stand erect, proud and unafraid; to think and act for myself; enjoy the benefits of my creations and to face the world boldly and say, "This I have done." All this is what it means to be an American.

Non Tentare, Non Pugnare

As Auxiliary president, I had the privilege of attending the Smith Kline and French Public Speaking Seminar presented by the Iowa Interprofessional Association. The two day seminar provided the 30 participants with instruction in speech preparation and speech presentation.

At one time or another we all have occasion to address an audience, and with the possible exception of a few professional public speakers, almost all of us experience a moment of sheer fright as we approach the rostrum. With a few suggestions for speech preparation and delivery, plus a little experience, we can master this moment. Use of a prepared manuscript provides assurance to the infrequent public speaker. Familiarity with the manuscript allows the speaker to maintain eye contact with his audience and to avoid the stereotyped presentation that is often associated with a memorized text. It also eliminates the embarrassment of suddenly forgetting your lines.

How a speech is put together is often more important than what the speaker says or how he says it. "Effective organization can make a mediocre speech good and a good one better." The following simple outline can be adapted to almost any talk:

I. Introduction—acknowledge persons of note present and members of the group you are addressing.
   A. "Icebreaker"—an anecdote, an unusual definition of the subject, a rhetorical question, a quotation, a joke, a personal narrative.
   B. Preview—announce the theme of the speech and enumerate the main points to be developed.
II. Body of speech
   A. Theme or thesis—Main points to be made. This can be accomplished
      1. In a time sequence as the past, present, future of a situation or event ("The Gettysburg Address" is organized in this pattern)
      2. In a spatial pattern as top, middle, bottom, or near, middle-distant, far
      3. In a topical order as who, what, where, when, how and why
      4. In a logical order as problem, damage, solution
III. Conclusion
   A. Summary—a strong and complete final summary of your reasons.
   B. "Haymaker"—a hard hitting, dramatic or memorable remark relating to the theme; a poem, a dramatic statement, question, quotation or challenge.

With manuscripts in hand, the participants then worked on the fine art of presentation, or as one instructor suggested, "how not to loose your audience in the first few minutes." The downfall of many female speakers is a "mousey whisper," being overpowered by the height of the speakers rostrum, shifting weight from one foot to the other (the result of pinch-toe, high heels), picturesque hats, spectacular accessories.

The audience, we were told, is most forgiving about minor faux pas, particularly if the speaker does not call attention to them, but has little tolerance for the poorly prepared and poorly presented speech. Time spent in preparation, and practice first before the mirror, and then with family or friends as helpful critics, will do much to assure the speaker of good audience reception.

As Auxiliary members we have increasing need to be good speakers. Good communication, both among ourselves and with other organizations, is essential to mutual respect and understanding. Public speaking can be a rewarding experience. As the participants in the Smith Kline and French Speech Training Course are told, "Non Tentare, Non Pugnare," or "If you haven't tried it, don't knock it."

JANET ELLIS

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 50312
President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104
Recording Secretary—Mrs. M. E. Olsen, Minden 51553
Corresponding Secretary—Mrs. C. W. Latchem, 942 56th Street, Des Moines 50312
Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312
Editor of THE NEWS—Mrs. J. F. Throckmorton, 1201 64th Street, Des Moines 50311
Associate Editor—Mrs. J. G. Thomsen, 207 Glenview Drive, Des Moines 50312

JOURNAL of The IOWA MEDICAL SOCIETY

.C. MEDICAL CENTER LIBRARY
FEB 12 1965
San Francisco 94122

IN THIS ISSUE:

- Comprehensive Mental Health Care, Paul E. Huston, M.D.—Page 55
- The Clinical Approach to Certain Post-Natally Acquired Causes of Mental Retardation, William E. Bell, M.D.—Page 60
- Present-Day Diagnosis and Treatment of Gout, L. Maxwell Lockie, M.D.—Page 65
- Care of the Feet of the Rheumatoid Patient, Carroll B. Larson, M.D.—Page 68
- Neonatal Spontaneous Gastric Perforation, With Survival, Paul A. La Porte, M.D. and Ralph E. Woodard, M.D.—Page 72

AMYTAL TAKES THE EDGE OFF DAYTIME ANXIETY AND TENSION

Amytal is a moderately long-acting barbiturate that takes the edge off daytime anxiety and tension without significant change in mood and attitude. Since Amytal is metabolized in the liver within twenty-eight hours, overlapping of effect is minimized, and renal damage does not constitute an absolute contraindication to the drug.

Side-Effects: Idiosyncrasy or allergic reactions to the barbiturates may occur.

Precautions and Contraindications: Amytal should be used with caution in patients with decreased liver function, since a prolongation of effect may occur. Administration in the presence of uncontrolled pain may produce excitement. Warning—May be habit-forming.

Dosage: Doses should be individualized for each patient. The usual adult sedative dosage ranges from 30 mg. (1/2 grain) to 50 mg. (3/4 grain) two or three times daily.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis 6, Indiana.

AMYTAL® AMOBARBITAL

Lilly

401174

FEBRUARY, 1965

epilepsy may limit opportunity...

Dilantin®
(diphenylhydantoin)

PARKE-DAVIS

extends horizons

This agent "...has brought new hope to an entire generation of seizure patients....With judicious use, it may be said that it alone is responsible for the prevention of more seizures than any other drug."*

DILANTIN (diphenylhydantoin) can help your epileptic patient to earn a livelihood...to prove his worth...and to share in the daily give-and-take as a full-fledged member of the workaday world.

Indications: Grand mal epilepsy and certain other convulsive states.

Precautions: Toxic effects are infrequent: allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Eruptions then usually subside. Though mild and rarely an indication for stopping dosage, gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered, especially in children, adolescents, and young adults. During initial treatment, minor side effects may include gastric distress, nausea, weight loss, transient nervousness, sleeplessness, and a feeling of unsteadiness. All usually subside with continued use. Megaloblastic anemia, aplastic anemia, leukopenia, granulocytopenia and pancytopenia have been reported. Nystagmus may develop. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. Periodic examination of the blood is advisable.

DILANTIN (diphenylhydantoin sodium) is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm.

*Roseman, E.: *Neurology* **11**:912, 1961. 33664

PARKE-DAVIS

PARKE, DAVIS & COMPANY, Detroit, Michigan 48232

LACTINEX®

TABLETS & GRANULES

to help restore and stabilize the intestinal flora

for fever blisters and canker sores of herpetic origin

LACTINEX—a viable culture containing both *Lactobacillus acidophilus* and *L. bulgaricus*—was first introduced to help restore the flora of the intestinal tract in infants and adults.[1, 2, 3, 4]

Further clinical work showed LACTINEX to be successful in the treatment of fever blisters and canker sores of herpetic origin.[4, 5, 6, 7]

No untoward side effects have been reported in 12 years of clinical use.

Literature on indications and dosage available on request.

(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

HYNSON, WESTCOTT & DUNNING, INC.

(LXD2)

BALTIMORE, MARYLAND 21201

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV FEBRUARY, 1965 No. 2

CONTENTS

SCIENTIFIC ARTICLES

Comprehensive Mental Health Care
Paul E. Huston, M.D. 55

The Clinical Approach to Certain Post-Natally Acquired Causes of Mental Retardation
William E. Bell, M.D. 60

Present-Day Diagnosis and Treatment of Gout
L. Maxwell Lockie, M.D. 65

Care of the Feet of the Rheumatoid Patient
Carroll B. Larson, M.D. 68

Neonatal Spontaneous Gastric Perforation, with Survival
Paul A. La Porte, M.D., and Ralph E. Woodard, M.D. 72

University of Iowa College of Medicine Clinical Pathologic Conference 75

EDITORIALS

A Fish Story That Is No Fish Story 84

Anticoagulants for Elderly Accident Patients? . 84

Antibiotics Can Hinder More Than Help . . . 85

Thyrotoxicosis in Childhood 87

SPECIAL DEPARTMENTS

Coming Meetings 83

President's Page 90

Journal Book Shelf 91

Iowa Chapter of the American Academy of General Practice 93

The Doctor's Business 94

Iowa Association of Medical Assistants 95

In the Public Interest . . . . . facing page 96

State Department of Health 97

Woman's Auxiliary News 101

The Month in Washington xxvi

Personals xxviii

Deaths xlii

MISCELLANEOUS

Ninth Blank Hospital Pediatric Conference . . 71

AMA Environmental Health Congress 82

U. of I. Conference on Infertility and Endocrinology 89

AMA Will Issue Birth-Control Information to M.D.'s 96

U. of I. Survey of Iowa Nursing Homes . . . xlii

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor..... .....Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D.....Iowa City
Floyd M. Burgeson, M.D.....Des Moines
Daniel A. Glomset, M.D.....Des Moines
Robert N. Larimer, M.D.....Sioux City
Daniel F. Crowley, M.D.....Des Moines

PUBLICATION COMMITTEE

Samuel P. Leinbach, M.D.....Belmond
Cecil W. Seibert, M.D.....Waterloo
John H. Sunderbruch, M.D.....Davenport
Richard F. Birge, M.D., Secretary.....Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

Scientific Articles

Comprehensive Mental Health Care

PAUL E. HUSTON, M.D.
Iowa City

As many of you know, the Mental Health Authority is assisting in the development of a comprehensive mental health plan for the State of Iowa. In this context the word *comprehensive* is so overwhelming that it recalls a remark by Thomas Carlyle, "I don't pretend to understand the universe —it's a great deal bigger than I am." Comprehensive mental health care has so many facets that it defies fitting into nice, neat categories. Furthermore, the rapidly changing scene in medicine seems to dictate plans of a temporary nature. We must keep our thinking flexible and adaptable to new ideas.

Ideas to improve the care of the mentally ill have gone through many changes in the past decade. Now these are highlighted not only by the current comprehensive planning activities in all the states, but also by the passage last February of Public Law 88-164 which appropriated money for the construction of comprehensive care centers in local communities.

A GLIMPSE AT THE PAST

First a brief historical reference. In the early part of the last century, small mental hospitals were built in this country. These were led by physicians with high dedication. They restored the majority of the patients to effective life in the community. After the Civil War, national scandals developed chiefly because of inadequate care for the indigent mentally ill, often confined in jails and almshouses. It became the practice more and more to build state institutions for the care of the mentally ill. Also with the passage of time, an attitude that mental disease was incurable developed within the medical profession itself. As a result, the state institutions became larger and larger, and acquired massive administrative departments. There was overcrowding, and there was understaffing. Patients lost their identity and lived on in the institutions for years—often until they died. For example, the Worcester State Hospital, long regarded as one of the best of state institutions, showed a discharge rate of 45 per cent in the period extending from 1833 to 1862, but this rate declined to 10 per cent in the period 1943-1950.[1]

About 15 years ago, this situation began again to receive greater national attention. Reporters referred to the state institutions as "the shame of the states." In Iowa, for example, there were about 6,000 individuals in our state mental institutions, and they were 30 per cent overcrowded. The economic burden was large, constituting the third largest item in the state's expenditures (highways occupying first place, and higher education second). A visitor to state institutions returned with shocking stories. He might see scores of nude patients milling around in a locked ward; in other wards, patients sat motionless on benches along the wall; other patients, dressed in drab uniform clothing, wandered hopelessly about the grounds. A custodial and pessimistic attitude toward treatment hung heavily over these institutions.

Gradually, demands for reform became insistent. In 1958, Dr. Harry Solomon, of Massachusetts, then president of the American Psychiatric Association, asserted that the state hospitals were obsolete institutions which should be liquidated as rapidly as possible.

Dr. Huston, head of psychiatry at the U. of I. College of Medicine and director of the Iowa Mental Health Authority, made this presentation at a meeting of the Scott County Medical Society, in Davenport, during October, 1964.

A NEW PERSPECTIVE

Meanwhile a new perspective was growing. The educated public began to appreciate the importance of mental and emotional problems in the population at large. For example, the greatest numbers of rejections for military service in World War II (as well as in World War I) were consequences of psychiatric disorders, and the greatest numbers of medical discharges from military service were also for psychiatric reasons. An important discovery made during the war showed that many soldiers with acute breakdowns could be functionally restored or cured if treated promptly and close to the battlefront. Physicians began to appreciate the importance of emotional and mental factors in disease generally, and to re-emphasize what general practitioners had known for a long time—that to treat a patient successfully, whatever his disease, one frequently has to manage and/or treat the emotional components of his illness.

Two highly significant developments occurred, both primarily in the field of private practice. The first was the development of psychiatric units in general hospitals. Dr. A. E. Bennett, of Omaha, pioneered in this field. The effectiveness of electrotherapy in depression, and the use of the tranquilizing and antidepressant drugs, helped to make these units possible. Today, general hospital units (plus private mental hospitals) admit as many psychiatric patients as do all state and federal hospitals combined. The increasing extension of Blue Cross and Blue Shield coverage to mental illness has materially assisted this movement. The second development has been the treating of milder psychiatric conditions in office practice. These two developments have moved psychiatry much closer to medicine, and have demonstrated to the profession and to the public that patients can be treated successfully in their own communities.

To illustrate the rapid evolution of private practice in psychiatry, we note that 25 years ago, only 10 to 15 per cent of the 3,000 members of the American Psychiatric Association were in private practice. Now of its 14,000 members, about 85 per cent are in full- or part-time private practice.

EXISTING IOWA FACILITIES

During these years another movement occurred —the multiplication of the mental health clinics. Originally patterned after the child guidance clinics, these have become more like outpatient clinics. The first one in Iowa was the Des Moines Child Guidance Clinic. Beginning in 1947 with the establishment of the Mental Health Authority at the Psychopathic Hospital, new clinics have been sponsored. Today 16 of these exist, serving 44 counties and over one-half of the state's population. The staff of a clinic consists of a psychiatrist in charge, assisted by a psychologist and two or three social workers.

In the beginning, these clinics treated minor illnesses chiefly, and about half the patients were children, but as time has gone on, the clinics have seen more adults with more serious difficulties. In most of the Iowa clinics, the psychiatrist spends part of his time in the clinic and the remainder in private practice. He may have some patients in the general hospital. He sees patients on referral from other physicians, and refers patients to them for general or specialized care. He becomes part of the medical community, as well as a local citizen. The clinic depends upon medical leadership and responsibility.

The Iowa clinic system differs from that found in many other parts of the country, as, for example in New York and Minnesota, where half the financial support of the clinics comes from the state. In Iowa the clinics are entirely locally financed, managed and controlled. In over half the states the Mental Health Authority is located in the Department of Health; in about a quarter of the states in the Department of Welfare; and in seven or eight in a Department of Mental Health. The remainder are scattered in various departments. Iowa has an arrangement that is unique, since the Mental Health Authority is in close contact with a university school of medicine and under the Board of Regents. In Iowa City, our concept was that this Authority's purpose should be educational, and so we have provided public education in mental health and professional education for clinic staffs, and have helped communities organize new clinics.

The Iowa Mental Health Authority receives no state funds. The term *Authority* refers only to its legal ability to receive federal funds. It controls no clinics, or programs, nor does it provide any direct services to patients. All these are matters for local community determination.

To give you a somewhat clearer picture of the distribution of the psychiatric treatment load in Iowa, I shall report from a survey which we conducted in the spring of 1962. In that study, we included only the psychiatrists in private practice and the psychiatric services in hospitals and clinics. Fifty per cent of the new patients were being seen by psychiatrists in private practice; 20 per cent by those in Board of Control institutions, 17 per cent by those in the Mental Health Centers; 8 per cent by those at the Psychopathic Hospital; and 5 per cent by those employed by the Veterans Administration. There was no estimate of the number of psychiatric cases seen by general practitioners and nonpsychiatric specialists. This last, though unknown, must be a significant figure. A recent pilot survey in Iowa City disclosed that of 600 patients being seen by five general practitioners and one pediatrician, 8 per cent were considered primarily psychiatric and another 22 per cent had psychiatric problems as significant components in their illnesses. A tentative estimate suggests that 95 per cent of patients with mental problems receive treatment from nonpsychiatric physicians.

NEW OPPORTUNITIES

Poor patterns of state care, the growth of private practice and psychiatric units in general hospitals, the popularity of local clinics, and the recognition of unmet needs—these were the factors setting the stage for President Kennedy's message to Congress in February, 1963. This message called for a national program for mental health, and a national program to combat mental retardation. The national program for mental health had three essential features: 1) the development of comprehensive community mental health centers; 2) improved care in state mental institutions; and 3) more research and increased manpower. The program for mental retardation called for programs of prevention, community services and research. Since I want to concentrate on mental illness, my further remarks will concern only the mental health program. Last spring Congress approved the appropriation of $150,000,000 for the construction of comprehensive mental health centers. A key sentence in President Kennedy's message was that this program should be designed to return the care of the mentally ill to the mainstream of medicine.

For construction purposes, federal regulations list the following as the essential elements of a comprehensive mental health center: 1) inpatient services; 2) outpatient services; 3) partial hospitalization services—including at least day-care services; 4) emergency services provided for 24 hours a day and available within at least one of the first three services listed above; and 5) consultation and education services available to community agencies and professional personnel. Also listed for adequacy but not as essential are diagnostic services, rehabilitative services including vocational and educational programs, pre- and after-care services including foster home placement, home visiting, half-way houses, training, and research and evaluation.

In the promotion of this program, emphasis has been placed on local treatment for a number of reasons. Local facilities often have better medical resources and personnel than do state institutions in relatively isolated locations. The stigma which, unfortunately, frequently attaches to patients in state institutions is avoided. Treatment is prompter and shorter. The patient is not isolated from his relatives and friends, and does not have his relationships to his community disrupted or alienated. The cost is much less than treatment elsewhere.[2]

Comprehensive centers obviously should be located as a part of or in a working association with general hospitals. A brand new building needn't be erected to house all of these services. Many communities already have adequate existing structures. Rather, the services available need somehow to be fitted into a more comprehensive concept. One community might need inpatient beds added to its general hospital; another might need an outpatient service; and another might need a day hospital. It is assumed that nonpsychiatric physicians will play a significant role in these centers.

The construction money for Iowa will be available on about a 50-50 basis, i.e., 50 per cent federal money and 50 per cent local money. The Department of Health is charged with developing a state plan for construction, and the 1964 special session of the Iowa General Assembly created a committee of 11 persons to advise the Commissioner of Health concerning state rules and applications. After approval, the contract for the construction will be entered into by the local facility and the federal government. Iowa's share of the $150,000,000 will be about $2,250,000. Of that sum, $575,000 became available in July, 1964; $975,000 will become available in the following fiscal year; and the remainder will be released in the third year. Some areas in Iowa already have started to plan the development of more comprehensive services for their localities.

It is believed that more nearly adequate local services will reduce admissions to the state hospitals to a low level. It has been estimated that if 150 beds were added to strategically located general hospitals in this state, first admissions to the state hospitals could be nearly abolished.

That intensive treatment pays off is not a fantasy. In Missouri, recently, a comparison was made between large state hospitals and small intensive-treatment centers. The final report stated: "The results of the study can be summarized very briefly. Those patients admitted to the short-term intensive treatment centers, regardless of age or diagnosis, had a significantly shorter average length of stay in hospital than those admitted to the state hospital system. Despite the fact that the re-admission rates did not disclose any startling differences between the two types of hospitals, the fact was that those re-admitted patients discharged from the intensive treatment centers were able to remain outside the hospital for significantly longer periods of time than those who had been treated in the state hospitals. Finally, any given patient had a much greater chance of being returned to his community within any specified time period from the intensive treatment centers than from the state hospitals."[3]

Cost of care concerns anyone who plans for services. To gain some understanding of this factor, we have studied the cost of the hospitalization phase of illness in one state hospital and the cost at one psychiatric unit in a general hospital. In the state hospital, the cost of care for a new patient on the acute ward was $10.08 per day, and the average stay was 76 days; added to this was a cost of $5.91 per day for 20 days on a continued treatment ward. The total cost for the 96 days was $899.62 (including a $15.34 transportation charge). In the private unit in the general hospital, the cost for a new patient was $28.34 per day for an aver-

age stay of 12 days, or a total cost of $340.08 (including a $4.96 transportation charge). These figures include professional salaries at the state institution and professional fees at the general hospital.

These cost figures do not reflect costs of an illness which would have to include costs before and after hospital treatment. Nor do they reflect loss of productivity and income to the patient. Also, comparative cost studies of this type do not say anything about factors possibly related to the differences in length of hospital care. The differing lengths of stay in two patterns of care may involve differences in the two institutions such as the legal status of the patients, the duration and severity of their illnesses, the economic, social and educational levels of the patients, the institutional attitudes and routines, the staffing patterns, the size of the hospital, the community attitudes, and so on. Identification of these factors requires further analysis.

CHRONIC PATIENTS ARE A SPECIAL PROBLEM

Something must be said about the chronic patient. Let us assume that five years from now we have developed our local private and public resources for local care of acute cases. What about the patients who still reside in state institutions? What about the many patients who have been transferred to county homes and to nursing homes? In 1963, there were 2,648 patients who had been transferred from state hospitals to county homes, and an unknown number in nursing homes. Much of the population of the state hospitals continues to consist of so-called chronic patients. Who is to care for them? Is this only a temporary situation which will disappear over the next 20 years or more, after these patients have died? Can most patients be treated on an acute basis, and retreated if they become sick again, without need for long continued hospital residence? These questions cannot be answered completely at the present time. One reason is the problem of chronic dependency.

At the Psychopathic Hospital we have a kind of rule of thumb. Some patients, when they have been kept for more than two months, start to become dependent on the institution, and it then becomes increasingly difficult to discharge them. Being a patient constitutes a kind of good life for some persons. Such an individual learns how to show signs and symptoms of illness in order to protect his security.

To illustrate chronic dependency I cite a case. Recently, at the Psychopathic Hospital, we admitted a lady, age 60, who had resided for 25 years in a state hospital. When she arrived, she ate with her fingers, wore a dirty dress, desired to associate with no one, and was hostile and belligerent. She resented the admission because she wanted to go home—i.e., back to the state institution where she could be protected by the man who had been her physician ever since she first entered there, 25 years earlier. She carried a diagnosis of chronic schizophrenia. Gradually—through persuasion, through contact with less deteriorated patients, and through employment and the judicious use of drugs—she was changed dramatically. She ate in the dining room, along with others, using the proper etiquette. She wore a new dress, participated in activities with others, and no longer thought of the state hospital as her home.

During this change, however, she played at being psychotic. She complained that her cigarettes tasted queer, that the food was poisoned, and that she heard voices. Careful questioning disclosed these as attempts on her part to be sent back to the state institution. Over six months ago, this patient was discharged to a nursing home after being with us about three months. There she lives in friendly association with other persons. However, though more socially acceptable, she is still chronically dependent.

How many other patients have no place to go simply because they have no relatives or others who will help them? How many could be cared for as outpatients while living at home and being seen occasionally for adjustment of their medication or advice as to work and other activities? From the purely medical standpoint, except for a severe untreatable illness, no patient needs continued hospital care.

MUCH REMAINS TO BE DONE

Some of my readers may think that I am attacking the state hospitals in Iowa. Emphatically, I am not. Iowa's state institutions have improved tremendously over the past several years. The size of each institution has been markedly reduced, as has the average length of hospital stay. Meanwhile the admission rates have increased. For many patients, an improved attitude of hope exists in the state system. We need these institutions, at the present time, for those cases which cannot adequately be cared for elsewhere.

Rather, I am proposing that acute patients should be treated locally, where most will respond. I am suggesting that the larger communities in Iowa have better resources for rehabilitating chronic patients than do the remote institutions. If we can coordinate and expand our local treatment resources, we can reduce the load on our state institutions, thus giving them an opportunity to develop more intensive programs for chronic patients. I am indicating that the pattern of care for the mental patient ought to be the same as for patients with other illnesses such as heart disease, polio, cancer and so on. This pattern of care must include prevention, treatment, and rehabilitation.

The American Medical Association has declared mental health to be one of its chief responsibilities. It has stated: "Mental illness is America's most

pressing and complex health problem." The AMA believes that the physician, both as a man of science and as a citizen, should participate in improving the mental health of the people. As a natural community leader, he is in a strategic position to work for and guide effective mental health programs. Facilities must be created or supplemented at the community level to meet the mental health needs of the child, the adult, the family and the aged, as well as of the mentally retarded, the delinquent and the alcoholic.

Nearly two years ago, the American Medical Association sponsored a National Congress of Mental Health attended by 2,500 people. Last February a follow-up meeting was held, this time restricted to three representatives from each state, the secretary of the state medical society, a representative of private psychiatry, and a representative of a state agency. Several state medical societies have had statewide congresses on mental health, sponsored by their state associations. In some states, county societies are organizing special mental health committees. These committees are examining the resources for care in their areas, they are attempting to determine how many mental patients there are and what kinds of care they need. They are thinking seriously about the development of programs of comprehensive mental health care. Some counties are fairly well provided for, others are not. It is my hope that, through leadership provided by the medical profession, in five to eight years from now we shall be able to say that local care of the mentally ill will be the dominating pattern even for the indigent patient.

The immediate job is to plan for the acutely ill patient. But in planning for the acute patient, we must look to the future also, to consider the better care of the chronic patient.

Scott County, along with many other counties, has participated in these developments in the past twenty years. Scott County is to be congratulated on the breadth of its resources. In Scott County there are now three psychiatrists in private practice. There is a psychiatric unit in a local general hospital. There is a Mental Health Clinic which has been in existence since 1949. In addition to these, many individuals are cared for in the county home, custodial homes, nursing homes and at Pine Knoll. Scott County also has a homemaker service, family and children services, and an organization devoted to vocational rehabilitation. There are social workers in the welfare office, and there are public health nurses. Scott County has an able group of private practitioners. Scott County would seem to have all the elements necessary for the development of a comprehensive mental health service, and probably without any major construction. To find some method of bringing these various organizations and resources together in a meaningful way so that the objective of local care for both the acute and the chronic patient, private and public, can be accomplished seems the logical next step.

It would be my hope that the Scott County Medical Society would play a leading role in such an effort. Possibly a committee of the Society could consider these matters. A committee on mental health ought not to be left to the psychiatrists alone. It should rather be part of a more general health committee, including general practitioners and all specialties. Mental health ought not to be set apart from the rest of medicine.

PHYSICIANS SHOULD PROVIDE LEADERSHIP

It is, of course, my own bias that physicians should take the lead in all of these movements. Health and illness are their business. If physicians are not in the forefront of such movements, health matters gradually move out of the hands of physicians. Where local initiative fails, state and federal agencies tend to move in. Currently, according to my figures, Scott County is spending approximately $300,000 a year for the support of patients in Mt. Pleasant. The available data on costs of care indicate that Scott County could do this job on its own for less money and could provide more adequate service by coordinating its own resources. Possibly the Scott County Medical Society could set an example for the rest of the state.

The general objectives of the program are quite clear. These are to provide adequate treatment as early as possible, as often as indicated, without separating the patient from his family and community. Treatment should be done while the patient is on the job, at home and in his home community.

I would like to close with a quotation from Daniel Blain, M.D., president of the American Psychiatric Association. "Participation of the private practitioner in providing services is more and more accepted by large numbers of psychiatrists throughout the nation. It has been pointed out and received with growing acceptance that if the present overall framework of therapy—that is the irrational state system, separation of rich and poor, and neglect of many—is to be altered, and in its place substituted more local, homegrown treatment facilities, it will be necessary for members of the profession to go even further in their current interest in public programs and agencies and to accept some responsibility for 'the other half' who do not customarily come to their offices for treatment."[4]

REFERENCES

1. Bockoven, J. S.: Moral treatment in American psychiatry. J. Nerv. Ment. Dis. **124**:167-321 (Aug.-Sept.) 1956.
2. Comprehensive Community Mental Health Center. Public Health Service Pub. No. 1137, 1964.
3. Ulett, G. A., Hardwicke, H. M., Cravens, R. B., and Masterman, L. E.: Intensive psychiatric treatment hospitals and Missouri's state mental hospitals. Missouri Medicine **59**:867-74 (Sept.) 1962.
4. Blain, D.: "Framework of Therapy." In: Current Psychiatric Therapies, Vol. 4, N. Y. Grune and Stratton, pp. 1-12, 1964.

The Clinical Approach to Certain Post-Natally Acquired Causes of Mental Retardation

WILLIAM E. BELL, M.D.
Galveston, Texas

As diagnostic testing facilities become more sophisticated and laboratory means more efficient, our ability to recognize preventable causes of mental retardation is enhanced. However, despite our modern-day ancillary technics, the physician must be aware of the expected historical features and prominent physical examination findings before laboratory analysis can be of assistance. I should like to discuss certain clinical disorders, primarily of infancy, which will usually lead to defective mental functioning if they are not diagnosed promptly and accurately.

Mental retardation should not be thought of as a specific medical diagnosis, at least from an etiologic standpoint. It represents more a description of certain aspects of the patient's behavior that is concerned with learning, intellectual and adaptive capabilities, and may be due, among other things, to an underlying chemical or enzymatic cerebral disturbance. The disorders to be discussed will be presented as fairly well delineated clinical syndromes. However, it is important to point out that in many instances no absolute explanation will be found to account for a particular child's subnormal mental ability. Nonetheless, each child with such a handicap should be given the benefit of a diagnostic survey so as beyond reasonable doubt to exclude the existence of a disorder amenable to therapy. Certainly, those disorders that result in organic changes in the brain before birth cannot readily be reversed therapeutically. A brief classification on a temporal basis might be as follows: 1) genetic, including chromosomal abnormalities (primary amentia, trisomy 18, trisomy 21 or Down's syndrome); 2) intra-uterine acquired (maternal rubella, maternal irradiation, placental abnormalities); 3) paranatal (trauma, anoxia, eclampsia, fetal narcosis); 4) postnatal, acquired. It is the last of these groups that will be reviewed in detail, since it includes most of the cases in which intellectual impairment can be remedied or even prevented. In this classification, we may include such disorders as phenylketonuria, galactosemia, hypoglycemia, hypercalcemia of infancy, hypernatremia, hypothyroidism, subdural hematoma, craniosynostosis and even maternal deprivation. One should keep in mind that the above artificially constructed classifications are based upon the time of the cerebral insult, and not upon the fundamental etiology of the disease. For example, in phenylketonuria the cerebral structural defect occurs after birth (postnatal, acquired) though etiologically, the disease is known to be genetic and inherited as an autosomal recessive trait.

Dr. Bell is an assistant professor of pediatric neurology at the University of Texas Medical Branch. In large part, this is a presentation that he made at a postgraduate short course in adult and child neurology, in Iowa City, during May, 1964, when he held a similar post at the University of Iowa.

DEVELOPMENTAL RETARDATION AND MENTAL RETARDATION

Since most of this presentation will deal with problems of children up to perhaps two years of age, a few comments concerning mental function and examination technics at this age are in order. In clinical practice we tend to differentiate developmental retardation from mental retardation. Normally, infants tend to achieve various developmental skills at certain ages. At six weeks, the usual term baby is able transiently to elevate the chin and extend the head while lying prone. At six months, he is apt to be sitting without assistance, and by 10 or 11 months, while sitting he can pivot around without losing balance. He will grasp objects by six months, and transfer them from hand to hand by seven months. Between 12 and 15 months, he is likely to begin walking without support. Many other developmental landmarks are available for analysis. When a child shows substantial delay in acquiring these skills, he is referred to as showing developmental delay.

It must be recognized, however, that developmental retardation in an infant does not necessarily foreshadow subsequent mental retardation. A hypotonic infant, for example, may not learn to sit alone until age 10-12 months, despite perfectly normal intellectual ability. This train of events is occasionally seen in children with the disorder referred to as benign congenital hypotonia. The pathogenesis of the decreased muscle tone here

remains unclear, but it appears to be a physiologic variation of the neural mechanisms regulating tone, and there usually is progressive improvement. Thus, despite slowness in gross motor skills, it is ordinarily wise to avoid making firm predictions about a child's mental abilities until he becomes old enough so that one can test these functions reliably.

Of the functions that tend to show some correlation with future intellect, one might mention hand control or dexterity, and certainly speech development. Even then, evaluation in these areas is more important in a negative fashion, in that adequate development at the proper age tends to foreshadow normal future intellectual functioning. One expects a normal baby to be grasping objects in a palmar fashion by six or seven months, and to be showing some "pincer" type grasp, opposing the thumb to the index finger, by nine months. The symmetrical occurrence of this type of finger and hand control at the stated ages speaks well for the baby's progress. Total lack of intelligible speech by 18 months must be looked upon with concern, in this regard. It should be clear, however, that in order for speech to blossom, certain sensory receptors, especially those concerned with hearing, must be adequate. Children with hearing deficits will not learn to speak at the expected time. Other more centrally located disturbances, such as congenital auditory imperception, will delay speech development in the absence of any abnormality of intellect. School failure in the first or second grade is not uncommonly the result of either a hearing or a vision deficit. Fortunately, most educators and teachers are quite aware of this, and look carefully for such defects in slow learners.

With the above as an introduction, emphasis should be directed to the specific diseases in question. While many of these must be considered rare, they are indeed all important, since the final outcome often is determined by early diagnosis and treatment. Many find it useful to keep a checklist of these disorders and the available diagnostic tests. One can refer to such a list when evaluating a child who shows early developmental or mental retardation, or even failure to thrive generally.

PHENYLKETONURIA

Phenylketonuria is perhaps the classic example of a metabolic disorder that produces devastating changes in the nervous system, with resultant mental retardation. The discovery of the disease was made in Norway, in 1934, by Fölling. Dr. Fölling, a physician and biochemist, was asked to see two retarded siblings primarily because of the peculiar and distressing odor which they emitted. In the years that followed, phenylketonuria has become one of the most extensively studied metabolic disorders that affect childhood. The basic abnormality consists of a deficiency or inactivity of the hepatic enzyme phenylalanine hydroxylase, which is necessary for the conversion of the amino acid phenylalanine to tyrosine. The enzyme deficit results in an accumulation of phenylalanine in blood and body tissues, which must then be metabolized by alternate means. Among other substances, phenylpyruvic acid is formed and is excreted in large quantities in the urine. Phenyllactic acid and phenylacetic acid also are excreted in abnormally large quantities in the urine. It is probable that the abnormal production of phenylacetic acid accounts for the abnormal odor of children with this disease. Other metabolic pathways seem involved in phenylketonuria, probably because phenylalanine inhibits certain enzyme systems. A disturbance in tryptophan metabolism is reflected by the decreased urinary excretion of 5-hydroxyindoleacetic acid. Abnormality of conversion of tyrosine to one of the end-products, melanin, is indicated by the relative lack of skin pigmentation and by tendencies toward blondness and blue eyes in untreated patients with PKU.

The clinical features of greatest importance are those resulting from the progressive effect on the brain induced by certain of the abnormal metabolites. This effect is at its maximum in the first six or eight months of life, the period of most rapid neural growth. Most untreated patients become severely retarded, IQ's estimated at less than 25 being not uncommon. Skin manifestations may include persistent eczema and general lack of pigmentation. One of the most characteristic features is hyperactive, hyperkinetic behavior, often combined with repetitive and purposeless movements of the body as a whole or of certain bodily segments. Seizures occur in approximately 25 per cent of these children, and may be of almost any type. Infants with PKU may show the seizure pattern referred to as "infantile spasms" associated with the characteristic hypsarrhythmic electroencephalogram. Abnormalities in muscle tone are frequent. Increased muscle tone seems somewhat more common, but either hypertonicity or hypotonicity may be found on examination.

The diagnosis of phenylketonuria is arrived at by clinically suspecting the possibility and accomplishing the appropriate laboratory studies. Because of the excessive urinary excretion of phenylpyruvic acid, the addition of a few drops of 10 per cent ferric chloride to 5 cc. of urine results in a distinctive green color. Because the serum phenylalanine level must be at least 15 mg. per cent before the $FeCl_3$ test becomes positive, the child must be three or four weeks of age for this study to be of value. The serum phenylalanine level is also of diagnostic value, for most untreated patients will have levels over 20 mg. per cent. The normal blood level is usually less than 4 mg. per cent. The Guthrie inhibition assay has provided an additional means of detecting the disease, especially in the newborn nursery, where the standard $FeCl_3$ test will still be negative.

Therapy is available in the form of a low-phenylalanine diet. To be effective, the diet must be initiated early, before brain damage has occurred. The oldest age at which the diet can be begun and still be effective is not yet clear, but many feel that if the child has reached three to four years, little will be gained concerning mental development by use of the diet. On occasion, however, even at this age, hyperactivity can be diminished and seizures better controlled through the use of the phenylalanine-restricted diet. Early diagnosis and treatment, however, may provide society with a useful and normal citizen.

GALACTOSEMIA

Galactosemia is a related inborn error in that it is inherited as an autosomal recessive trait and involves an enzymatic deficit in the liver. A disturbance in function of galactose-1-phosphate uridyl transferase prevents conversion of galactose-1-phosphate to glucose-1-phosphate, thus interfering with normal galactose metabolism. Galactose (or milk sugar) intolerance develops in the young child. Like the phenylketonuric baby, the infant with galactosemia is clinically normal at birth. Often, an early indicator of future trouble is prolongation of physiologic jaundice. As early as two or three weeks of age, the infant may show signs of intolerance to milk, with vomiting, diarrhea and failure to gain. If exposure to milk persists, jaundice, hepatomegaly, cataracts, marked susceptibility to infection, ascites and eventually mental retardation are added to the earlier signs. Other infants seem to show a less fulminant course and are presented to the physician somewhat later in infancy, primarily because of their poor growth pattern. Examination then may reveal hepatomegaly or ascites. Seizures are not common in infants with galactosemia, but they may occur because of the low blood glucose levels present.

Several laboratory studies are suggestive of the disease, and a few are virtually diagnostic. The urine will contain reducing substances which can be identified as galactose. One must be cautious in the urine evaluation of such a child, however, for tests with glucose-specific, glucose oxidase preparations (Testape) will miss galactose. Double urine testing with Testape and with Benedict's solution provides a more definitive diagnosis. In addition, albuminuria is usually present. Total reducing substances in the blood are elevated as a result of the high galactose levels. A definitive diagnosis can be made by demonstrating an absence of the enzyme galactose-1-phosphate uridyl transferase in red blood cells. The galactose tolerance test is now less widely used, as a result of its tendency to cause hypoglycemia and hypokalemia in addition to exposing the child's brain to high levels of the toxic metabolites characteristic of this metabolic error.

Treatment of the child with galactosemia requires removal of galactose-containing substances from the diet. A casein hydrolysate such as Nutramigen has been most popular, and soya products have been somewhat less reliable. Rapid weight gain, decrease in liver size and regression in cataracts can be noted shortly after therapy has been started.

IDIOPATHIC HYPOGLYCEMIA

Idiopathic hypoglycemia of infancy may be a more important cause of mental retardation than any of us realize. It is likely that hypoglycemic episodes often remain unrecognized in infancy. As the child ages, the metabolic error recedes, and one is left with a retarded child without evidence of a chemical abnormality. The occurrence of episodic seizures, spells of unexplained cyanosis or persistent lethargy in an infant call for a detailed blood glucose investigation. Although the onset may occur at any time in childhood, the most frequent period for idiopathic hypoglycemia to begin is between ages six months and two years. The younger the child at onset, the more likely is persistent organic brain damage. Seizures represent the most common clinical manifestation of hypoglycemic episodes. Major, generalized convulsions are usual, yet focal motor seizures may also occur.

In recent years, idiopathic hypoglycemia of infancy has been divided into the leucine-insensitive and leucine-sensitive types. Seizures in the leucine-insensitive group are more apt to occur after a period of fasting, whereas those in the leucine-sensitive type appear in the post-prandial period. In either type, the baby frequently remains listless or lethargic because of hypoglycemia for hours after the seizure. This is rather uncommon in infants with seizures due to other causes, except of course, CNS infections or hemorrhage.

Treatment of the acute attack of hypoglycemia requires either intravenous glucose or a hyperglycemic agent such as glucagon. Prevention of subsequent episodes can often be accomplished through the sustained use of corticosteroids. Since the fundamental metabolic error seems usually to be self-limited, the use of steroids may be temporary. When the child shows no response to steroid therapy, one may find it necessary to resort to subtotal pancreatectomy.

HYPERCALCEMIA OF INFANCY

Low serum calcium, like decreased blood sugar, may cause seizures in infancy, but the former less frequently produces brain damage. Idiopathic hypercalcemia in infancy, on the other hand, is frequently associated with learning and intellectual deficits. This disorder has been described more commonly in the British literature, possibly because in the past, large amounts of vitamin D were used in infant feeding in that country.

Hypercalcemia of infancy is characterized by vomiting, constipation, hypotonia, lethargy, failure to thrive, progressive renal involvement and hy-

pertension. Subsequent mental retardation occurs in the severe cases. A characteristic facial appearance referred to as "elfin facies" has been described in these infants. This consists of antiverted nostrils, depressed nasal bridge, epicanthal folds, a rather hanging lower lip and low-set ears. Roentgen changes include marked bony sclerosis, the base of the skull being especially affected. The serum calcium is found to be elevated (11-15 mg. per cent) and the serum phosphorus depressed. The BUN is often elevated also.

The pathogenesis of this hypercalcemic syndrome has not been established. Either excessive exogenous intake of vitamin D or unusual sensitivity to vitamin D have been suspected. A relationship between idiopathic hypercalcemia of infancy and supravalvular aortic stenosis has recently become apparent. Restriction of vitamin D intake may be effective; however, corticosteroid therapy (cortisone acetate or prednisone) will rapidly reduce the elevated serum calcium to normal. As with the disorders described above, persistence of the blood biochemical defect for a prolonged period will cause irreversible mental retardation.

HYPERNATREMIA

A rather unhappy chapter in the area of acquired mental retardation is that some cases have been due to fluid and electrolyte disturbances, including hypernatremia. A sudden and marked elevation of serum sodium can result in a severe insult to the infant's brain, due both to the direct cellular effects and to the hemorrhagic cerebral complications of hypernatremia. Errors in formula preparation, such as the addition of salt instead of sugar, have occurred in both hospitals and homes. More commonly, infantile diarrhea, with loss of water in greater proportion than sodium, has resulted in hypertonic dehydration. As the hypernatremic state becomes more severe, the brain shrinks as a consequence of the transfer of water into the vascular compartment. The fragile vessels passing from the surface of the brain to the dural sinus become stretched and eventually rupture. Subarachnoid and subdural bleeding occur in association with hemorrhagic encephalopathy. Superior sagittal sinus thrombosis is also common, with subsequent cerebral venous infarction.

The infant with acute hypernatremia is lethargic or comatose, depending on the severity of cerebral pathology. Tremors, hyperirritability, hyperreflexia or a decerebrate state are usual physical findings. Neck rigidity is commonly described. Convulsions more frequently occur during rehydration, especially if too precipitous a reduction of the elevated sodium level is accomplished.

To be effective, preventive therapy is obviously most important. Attempts to prevent the occurrence of hyperosmolarity, and proper selection of fluid and electrolyte replacement once it has developed, speak for themselves. Once hemorrhagic changes have occurred in the brain in this state, the prognosis is poor. Many children will not survive, and those who do are likely to be severely affected, both from the mental and from the motor standpoint.

INFANTILE HYPOTHYROIDISM

To those who haven't recently seen or are not familiar with the appearance of a cretin, I suggest a quick look at a photo in one of our standard textbooks of pediatrics. Like mongols, cretins all tend to look like members of the same family. Cretins, however, do not look like mongols. Lethargy or mental torpor is described by the mother. Excessive tendency to sleep and general indifference to surroundings become more noticeable as the child ages. Constipation is virtually always present. On examining a hypothyroid infant, one finds marked developmental delay. The tongue is large, the abdomen prominent and umbilical hernia frequent. The skin is cool and dry and there is prominent vasomotor mottling. The nasal bridge is depressed, the facial expression is one of dullness and with puffiness of the eyelids and cheeks. The hairline often extends far down on the forehead. Muscle hypotonia is usually pronounced and deep-tendon reflexes sluggish, with prominent delay of the relaxation phase. The coarse, low-pitched cry of an untreated cretin is a distinctive finding present in few other clinical conditions.

Laboratory findings include anemia, low PBI and decreased I^{131} uptake. Serum alkaline phosphatase is decreased, and serum carotene increased. The serum cholesterol, often markedly elevated in adults with hypothyroidism, is ordinarily normal in infants with this disease. Roentgenographic survey for bone age demonstrates the delay of bone maturation. While bone age delay is suggestive of hypothyroidism in infancy, it must not be considered diagnostic as it may occur in other conditions.

Either thyroid extract or L-thyroxin may be used as replacement therapy. Many prefer the latter, for it appears somewhat more stable and contains a more constant biological activity. Each 0.1 mg. of L-thyroxin is approximately equal to 90 mg. thyroid extract. Prognosis depends in part on duration of the disorder prior to diagnosis and onset of therapy. Cretinism untreated until after age one year almost certainly will result in severe mental retardation. Initiation of replacement therapy in the first few weeks of life may well allow nearly normal neural maturation, yet even here, exceptions have been recorded. Hypothyroidism acquired after two years of age does not appear to cause any permanent brain deficit. This remarkable difference is related to the rapid growth and maturation of the cerebrum that occurs in the first year of life. Both biochemical and structural changes are rapidly occurring at this time. Thyroid hormone, among many other sub-

stances, is vital for normal protein synthesis and for proper development of the growing brain.

SUBDURAL HEMATOMA

The baby with subdural hematoma usually is presented to the physician sometime between ages three and seven months. The history obtained from the mother includes irritability, poor weight gain, vomiting and often seizures, either generalized or focal. The head circumference is apt to be abnormally large for age or body length, and the anterior fontanel large and bulging. Anemia may also be present. A history of head trauma need not be present, for the birth process itself may have provided sufficient trauma to produce subdural hematomas. Diagnostic subdural taps clarify the presence or absence of subdural hematoma and should be done promptly, but with rigid adherence to sterile technic. The tap is done at the lateral angle of the anterior fontanel, but only after the hair has been adequately shaved from the area and the scalp cleansed thoroughly with antiseptic solutions. Since the majority of subdural hematomas in infancy occur bilaterally, both sides should be investigated, even if the first side reveals bloody fluid. The ultimate outcome is not always good even if diagnosis is made early, but the prognosis appears invariably bad if the hematoma is not found and removed. The restricting effect of the hematoma and its membranes prevent brain growth and expansion, and severe cerebral atrophy is the outcome.

CRANIOSYNOSTOSIS

Craniosynostosis will be only briefly mentioned, since most types of this disorder do not produce mental retardation. The more common types of premature closure of cranial sutures, including sagittal suture or coronal suture synostosis, cause marked distortion of head shape, but not compression of the intracranial contents. Surgical repair of these conditions therefore is often for cosmetic reasons. However, the infant with universal premature sutural closure rapidly develops difficulty with increased intracranial pressure as the underlying brain attempts to grow. Either papilledema or optic atrophy may be noted; the head circumference remains small. Skull x-ray shows premature closure of sutures plus the silver-beaten appearance of the cranial vault, in this instance indicative of long-standing increased intracranial pressure. Unless it is surgically repaired, cerebral atrophy and mental retardation will be the end result.

The question is frequently raised as to how to distinguish craniosynostosis from microcephaly in early infancy. Since most cases of premature sutural closure involve only selected cranial sutures, the actual head size is not remarkable. Because of compensatory growth in the area of patent sutures, however, the head shape becomes markedly distorted. For example with sagittal suture synostosis, growth is restricted laterally, but advances through the coronal sutures in an AP direction, producing a long, narrow (scaphocephalic) head shape. The microcephalic child is characterized by a sloping forehead, a small and shallow anterior fossa, and general smallness of the head circumference for age. Skull x-rays show the relatively large facial structures in comparison with the cranial vault and the absence of roentgen evidence of increased intracranial pressure. In the absence of brain growth (microcephaly), no expansile force is at play, and as a secondary feature, sutures tend to close. This secondary and rather passive early closure of cranial sutures in microcephaly is of no actual clinical significance, for it is the underlying brain that is diseased.

MATERNAL DEPRIVATION

Finally, I mention a state which is actually of a psychiatric nature but which may closely mimic a retardation problem. The importance of sensory stimulation has become widely apparent in this day of high-altitude and space flight. Those interested in aviation medicine recognize the hazards the pilot may face flying at 70,000 feet with a constant masking noise and little to look at except endless blue sky. The relative sensory deprivation in this instance may occasionally result in transient visual hallucinations or other disturbing somatic symptoms.

For normal emotional maturation, the infant also needs certain forms of stimulation which in our culture are ordinarily provided by the mother. Total removal of the mother from an infant a few months of age may result in a state referred to as maternal deprivation, followed by indifference and apathy on the part of the child. Developmental milestones are delayed, and quite often the child is initially believed to be retarded mentally. Unless properly handled, lifetime institutionalization may be the outcome. Reappearance of the mother or the providing of a sympathetic mother-substitute is apt to be followed by dramatic and rapid strides in the child's appearance. It seems surprising that an infant so young can respond thus to an emotional deficit, yet this explanation must be considered in the evaluation of a child who is possibly retarded.

SUMMARY

Several diseases that cause brain damage and consequent intellectual deficits have been discussed. Although many are uncommon offenders, their existence nonetheless provides reasons why a diagnostic evaluation should be provided early, when it is apparent that a child is showing evidence of delay. If prompt and accurate diaagnosis is made of any of the above disorders, therapy may prevent the devastating effects that such diseases can have on the central nervous system.

Present-Day Diagnosis and Treatment of Gout

L. MAXWELL LOCKIE, M.D.
Buffalo, New York

GOUT IS A SUBJECT that is very dear to my heart. It should be important to you, too, not only because you are likely to encounter it in your practices but because many doctors contract it. I, myself have seen over 600 physicians who have gout. However, the last sentence in this presentation of mine should be somewhat as follows: "Nowadays it is rare for any patient to lose time from work because of gout or gouty arthritis."

Does your patient have gout? In order to know you must make a diagnosis, and in making a diagnosis there are certain facts that you can go by. Gouty arthritis can be diagnosed early. Very frequently there is a pattern, and it is typical, though not invariable. The story is that any patient who has pain in a joint or in a tendon area which comes on rapidly—within a period of two, four or six hours—has gout unless proved otherwise. In other forms of arthritis—rheumatoid- or osteoarthritis, cellulitis or maybe osteomyelitis—the onset is usually slow, and of a more insidious type, whereas with gout patients, pain attacks a joint or the tissues around it within a period of a few hours. Many patients go to bed feeling all right, or as well as usual, but wake up at two, four or six o'clock in the morning with severe pain in a foot, a toe, a tendon achilles or a knee joint. They have gout. This pattern is so simple that we often overlook it. The other half of the pattern story is that these people will recover completely if they do nothing for a period of four to 14 days. It is always a challenge to the physician to make the diagnosis when this first happens, but he can and should do so.

Suddenness of onset is signpost number one. Now number two—and this is one of the pathognomonic signs of gout—is the presence of a urate tophus. The tophi can be subcutaneous as well as osseous, and the presence of a urate tophus, whether in the ear, in the hand or in the foot, is a positive sign of gout. It must be a urate tophus, which by dictionary definition is a swelling or tumor-like mass filled with urate crystals.

Dr. Lockie, professor of therapeutics at the University of Buffalo School of Medicine, made this presentation at a postgraduate short course on arthritis and rheumatism in Iowa City.

Signpost number three is the serum uric acid level. We are all familiar with the fact that patients with gouty arthritis—or at least 99 per cent of them—have an elevated serum uric acid. A male who had 6.5 to 7.0 mg. per cent of serum uric acid has the top level of normal. Rarely, you do find a gout patient with one or two per cent in the serum. The sera of normal females will be less than 6.0 mg. per cent. It is important that serum uric acid be tested at a time when the patient is not on a uricosuric agent such as probenecid (Benemid) or sulfinpyrazone (Anturane), or even salicylates. A person who has taken these medications usually will have a depression of the serum uric acid level for the next 24 hours. Also, in most hospitals that do not employ the uricase method, one should be sure to have the test performed by a technician who does it frequently, and to be sure that she uses new reagents frequently.

The other pathognomonic sign consists of demonstrating urate crystals in the fluid from an involved joint. This can be done only by means of polarized light, and the crystals are beautiful when seen under 250 or 500 times magnification. They are not found in people who do not have gout.

So the diagnosis of gout consists of finding an elevated serum uric acid, urate crystals in synovial fluid, and a typical pattern of acute attack. Also, we should not omit the old, time-tested therapeutic trial of colchicine. Indeed, I want to stress strongly that when you see a patient in his first attack, you *must* give him colchicine to substantiate the diagnosis. I say "his" because, as we all know, 95 or 96 per cent of these patients are males, but not long ago I saw three sisters over the age of 80 who had gout.

As I was saying, it may be the last time that you give the patient colchicine in large amounts, but you should give it to him in a therapeutic dosage to determine whether or not there is a complete subsidence of pain and discomfort within 24 to 36 hours. I like to use two tablets, 1/120 grains or 500 mcg., every two hours until the patient has a little nausea or a loose bowel movement. When either of those complications has occurred, the colchicine should be stopped, for I have known patients to have 20 to 30 bowel movements, and those are too many. There has been only one case of colchicine death reported in a gouty patient. But anyway, colchicine, when it is administered, should be given to the point of therapeutic effect —i.e., two tablets every two hours until nausea or a loose bowel movement occurs. Then stop!!

These are the common tools that we use in making a diagnosis of gouty arthritis. While we are on the subject of uric acid, I should state that five per cent of the male population of a hospital will have serum uric acid levels higher than the maximums that I mentioned, but without symptoms. The patient's father may have gout; his brothers may have it; and this man has hyperuricemia or an elevated blood-serum uric acid. But he does not have gout. I hope I am making this clear, for my next statement will pertain to gout. If a person has had an acute attack of gouty arthritis, or has a tophus, that person then has gout. There is a fine line of distinction between a hyperuricemia and a case of gout.

A history is most useful when one examines any patient who has arthritis, whether it is gout, rheumatic fever, rheumatoid arthritis, Reiter's disease or whatever. Background information can often be most helpful in the making of an early diagnosis. The man with articular arthritis whom you see within five days after surgery should be treated for gout until some other cause for his pain can be demonstrated.

I don't know whether the cause has been an injury or the ingestion of various kinds of food and drink, but people who go to conventions and walk unusually long distances develop gout. We do see it after unusual exercise. Then there are some drugs that frequently cause this type of trouble. We must be especially careful about chlorothiazide and its derivatives, for I have seen them raise the concentration of serum uric acid quite markedly. Sulfathiazole has precipitated attacks, and there are other medications and injections that have had the same effect. It has been reported following vitamin B and liver injections.

Then there are associations between gout and other disabilities. The commonest in this group, of course, fall in the hematologic field. Persons who have polycythemia vera or leukemia are well known to have high levels of uric acid, and subsequently may develop gouty arthritis.

As regards sites of involvement, certainly the big-toe joint is still with us, but now we see more and more often that the knee or the wrist is involved, and if you have a patient with a painful tendon achilles, you should give him colchicine, for I have seen it produce spectacular improvement. It is rare for gout to occur in the shoulders or in the hips.

A favorite place for tophi to appear is in the ear, but don't forget, when you are examining the patient's ears to look everywhere, even under the margins. Tophi are also commonly found in the region of the elbow, and on the hands and feet. In elderly ladies, particularly in the 80-year-old group, when you depress and tighten the distal phalanx on the palmar side of the fingers, you may find deposits of uric acid in subcutaneous tissue.

X-ray of bone in gouty arthritis cases frequently reveals punched-out areas but no demineralization, but pictures taken five or seven years later, when the patients have been on probenecid (Benemid) steadily, show that these areas tend to fill in. Thus there is no change in the bony structure surrounding the tophus, and with the help of medication, the body is capable of repairing the bones.

TREATMENT

As I have said, colchicine should be given at the first attack of gout. That is about the last time you'll have to use cholchicine in large doses. Then you consider phenylbutazone (Butazolidin) or oral steroids. The secret in handling an acute attack is to instruct the patient to carry Butazolidin and have it available at all times, for at the very first instant that he feels that an acute attack is coming on, he should take two tablets for best results. Even when he merely thinks he is about to develop a severe attack, or has been exposed to high living—and you know what that can do in bringing on an attack—he might take two from a prophylactic point of view. Anyway, he should take two tablets immediately, and if an acute attack occurs he should take two tablets every two hours until he has had eight tablets, i.e., four doses. This means that within a six-hour period he will take eight tablets. We have had patients do this many, many times, and have never seen any side effects —no allergic phenomena, no influence on the bone marrow, no rash and no gastrointestinal symptoms. On the next day, when any pain whatsoever recurs, the patient should take eight more. That medication will take care of the symptoms accompanying an acute attack of gouty arthritis in the vast majority of instances. Only a rare case will fail to respond.

At the same time, the patient should avoid taking long walks or other extreme forms of exercise. He may go to work and perform his ordinary duties, however. People subject to gout should carry the medication in their shaving kits or handbags when they go on trips, so that it is available for immediate use. At the same time, we like to give colchicine—just two tablets daily, and that's all. It may act as a therapeutic adjuvant, for it does seem to potentiate the effect of the Butazolidin or oral steroids. The patient who has a stubborn case or has frequent attacks should take two tablets of colchicine daily for the rest of his life.

Some doctors and patients don't like Butazolidin, and for them there are steroids of various types. Triamcinalone is effective, and one should use two 4 mg. tablets in the same pattern for four doses—i.e., 8 mg. every two hours, or 32 mg. within six hours. If it is repeated the second day, along with a little bit of colchicine, it is effective in clearing up many acute attacks of gouty arthritis. Dexamethasone, 1.5 mg. every two hours for four doses if necessary, is also very effective.

One of the mainstays of treatment is ACTH. There are various ways of using it, and which one you employ depends upon circumstances. First of all, you can have a patient come to your office so

that you can give him an injection of 100 units in the morning and another in the afternoon. I like to use 100 units, and it can be given either one or two times a day. For the patient who has had surgery or is unable to take medication by mouth for any reason, but does develop an acute attack, or for the patient who comes to you after he has had an attack for ten days and is still suffering, you may want to use the intravenous method of administering ACTH. We give 30 units to such a patient over a six-hour period, and repeat it daily until relief occurs. No special instructions concerning diet or drink are given at this time.

What should you do after the patient has had an acute attack and has brought it under control? Then we enter into a very interesting situation. Let's take the person who has had an attack of gouty arthritis—his first attack—and there are no tophi on his ears, hands or feet. He feels well, and has only a slightly elevated serum uric acid level. I feel he should go without medication. There are a few general suggestions he should be given concerning diet, but as for medication, nothing.

Now what about the fellow who has attacks several times a year, but still has a low uric acid? He should be put on just colchicine and should be required to take a 500 mcg. tablet twice a day for life. We have patients now who have gone on for 15 years taking two tablets per day, and haven't run into any complicating physical problems. Recently I saw a patient who had been started on colchicine 18 years earlier. A psychiatrist had seen that she had swollen fingers and had said, "My dear lady, you must have gout. I'll prescribe some medication for it." So for 18 years—and this is a fact—she had taken her pills two or three times a day. When she came to our office and we asked her what her pills were, she said, "These are my nerve pills." I then discovered that they were colchicine. In the intervening 18 years, she had given birth to children and had undergone other stresses without difficulty. So I'm not worried about the possible bad effects of long term use of colchicine.

What about the person who has over 7.5 mg. per cent uric acid, who may or may not have tophi, and who has frequent attacks of gouty arthritis? That person is put on a combination of these two substances—probenicid (Benemid), which is given in a 500 mcg. tablet twice a day, and colchicine twice a day. There is a combination of colchicine and Benemid which can be taken morning and night. Benemid usually lowers the level of serum uric acid by 30 per cent. This provides no certainty that the patient won't have another attack, but it should prevent a further deposition of uric acid salts in the body. Besides, for some reason, it makes patients feel wonderful. Our patients have done exceedingly well on this program.

Now suppose your patient falls within the 10 per cent of people who get no benefit from probenicid (Benemid)—who say they have taken it regularly but whose urate levels do not come down. Then we use Anturane, for it is a more powerful uricosuric agent. It will lower the level of serum uric acid farther, and it will cause the body to excrete more urate than Benemid. We start out with a tablet twice a day. Then we take the uric acid level about 10 days or two weeks later, and if we aren't satisfied that it is down far enough, we go to three a day, and up to four.

Then if the patient doesn't respond, one may give combinations of these two, and you may find a combined therapeutic dosage that will lower the serum uric acid.

DIETARY AND OTHER RESTRICTIONS

When patients are on uricosuric agents, nowadays, we are not too fussy about what they eat, but I believe that a person with gout should never eat liver, kidney or sweetbreads, herring, anchovies or sardines, for they may precipitate acute gouty arthritis.

Next, let's trespass in an area where there is disagreement. Let's talk about liquor. It is my observation that people who have gout seem not to have much of a taste for hard liquor, but have a fondness for beer. Many of our patients are moderate beer drinkers—10 bottles per day or more—and I am of the opinion that beer taken in large quantities over long periods does something to those people. So if the patient is willing to cooperate fully, I tell him not to drink any beer. Wine isn't quite so bad, but I don't see many wine drinkers in my practice.

If you are prescribing any uricosuric agent, you must make sure that your patient drinks a lot of water, or he may have urinary gravel. However, the incidence of urinary stones does not seem to be increased in patients who are on uricosuric agents. These patients must drink a lot of fluids, and they should be told to keep their urine alkaline. We warn patients not to take diuretics without careful supervision. We also warn them that if they ever have occasion to undergo surgery, they should make clear to the surgeon that they have gout and that measures should be taken to prevent the occurrence of postoperative gout.

One other thing that I think is very worthwhile is that if a patient has severe gout with available tophi, one should clean them out surgically. Cleaning out these urate deposits is most desirable.

A person who is on large doses of uricosuric agents should not take large doses of aspirin or any other salicylate at the same time because the effect of the uricosuric agent may be lost completely. However, the patient may take a few aspirin occasionally without affecting the uricosuric effect of probenecid (Benemid) or sulfinpyrazone (Anturane).

SUMMARY

In summary, patients treated by the method described seldom have any periods of disability, and should be able to carry on their daily work without interruption.

Care of the Feet of the Rheumatoid Patient

CARROLL B. LARSON, M.D.
Iowa City

THE PURPOSE of this discussion is to point out the important aspects of rheumatoid arthritis as it occurs in the foot.

First of all, I should like to divide rheumatoid diseases of the foot into two categories. The first of these is the condition before deformity occurs, and the other is the condition after deformity has occurred. In patients with the first condition, it is very difficult at times—frequently, as a matter of fact—to recognize the diagnosis. One reason for this difficulty is that occasionally—more often than we should like to see it—the first joint attacked in a case of rheumatoid is in the foot. Very often, at that point, the physician does not suspect rheumatoid. Rather, and especially if he is an orthopedist, he thinks in terms of a foot strain—some mechanical disorder of the foot—and sometimes he treats the patient for many weeks on that basis, until rheumatoid occurs in other joints and the diagnosis thus becomes apparent.

I believe that when a foot complaint becomes persistent, the physician should be alert to rheumatoid as one of the diagnostic possibilities. Progression from joints of the foot to joints in other parts of the body may be very slow. A number of times, I have seen symptoms persist in the foot and remain there for as long as a year before showing up elsewhere.

DIAGNOSIS

When rheumatoid does occur in the foot in this pre-deformity stage, it can attack any one joint, it can attack multiple joints, or it can show up as pain at some distance from the affected joint. The last of these three possibilities is a factor that makes diagnosis very difficult. Just as Dr. Janet Travell has pointed out, the painful area may not necessarily represent the site of the lesion. A referral or trigger mechanism may be involved. Very frequently a patient with rheumatoid of the foot complains of pain along the peroneal group of muscles. He complains of cramps in the peroneal group or of fatigue in that area, and it often doesn't occur to the physician to look at the foot as the possible source of difficulty. The fact is, however, that if a patient has involvement of the subastragalar joint, which is one of the more common sites of rheumatoid in the foot, the peroneal muscles go into spasm to protect that joint against movement. In other words, peroneal spasm occurs, and it is muscular pain that the patient complains about.

It is up to the diagnostician to look at the foot, keeping in mind all of the reasons for peroneal spasm—rheumatoid being one of them—and corroborative signs will eventually lead him to the diagnosis. The subastragalar joint is very difficult to examine, and early rheumatoid will not show in the x-ray. Therefore the radiologic findings are likely to be negative, and one has very little to go on other than the peroneal spasm. To establish an early diagnosis, I think it is important to suspect the diagnosis promptly, rather than to treat the patient for foot strain, for the treatments are quite different in these two situations.

If one is thinking in terms of mechanical disorders of the foot, I think a helpful point in diagnosis is to account for all of the aches and pains of the foot. I doubt that there can be foot strain unless there is direct pressure tenderness over the metatarsal cuneiform joints. If this is absent, then the difficulty is not foot strain, and one should begin thinking about all of the other possibilities. We use this criterion very frequently and, I think, with good effect.

Other sources of pain in the foot—as far as other joints are concerned—might be the mid-tarsal joints, in which case a different set of symptoms occurs. Patients with such problems won't complain of pain in the mid-tarsal joint, for frequently there will be no swelling involved. Such people will overprotect by using a varus position of the foot, quite the opposite of that associated with peroneal spasm. If this varus position is persisted in, as a functional position for relief of pain, the rheumatoid process produces scar and the varus becomes fixed, thus converting rheumatoid without a deformity into rheumatoid with a deformity.

It is important, therefore, to recognize the underlying problem prior to the appearance of deformity, for I think the treatment should be aimed at the prevention of deformity.

TREATMENT IN PRE-DEFORMITY CASES

If one can make the diagnosis, or suspect it, while the foot is the only member involved, he then treats the foot as he would treat rheumatoid elsewhere, namely by medical management. One cannot relieve the pain by keeping the individual on his feet, yet he may be a worker whose livelihood depends upon his standing. One can't just

Dr. Larson, head of orthopedic surgery at the U. of I. College of Medicine, made this presentation at a postgraduate short course in Iowa City. He wishes it pointed out that his lecture was extemporaneous. It is a tape recording that has been reproduced here.

say, "Go home and go to bed." Intermittent use of the foot is often a practical compromise, in such cases, between bed rest and continuing to stand all day on the foot, producing secondary strains upon what is already rheumatoid, and producing more protective deformity and more pain. If the patient is made to understand why he must put weight on his foot only intermittently, he is apt to cooperate. In a number of these cases, I have compromised the patients' practice of standing all day to one of in-between standing, and as a result these people have remained active—hopefully to await remission of the disease—and deformities have been prevented.

I doubt very much whether foot-soaks, massages and all of the other modalities are of much help in rheumatoid of the foot. I think it is important, however, for the patient to understand his problem, so that he won't keep his protective spasm too constant, and as a result allow deformity to occur. I repeat that the treatment should be one of prophylaxis against deformity.

Now comes the question, "What are the common deformities that we are trying to prevent?" The commonest deformity in rheumatoid of the foot is a fixed cavus foot, cocking of the toes, then subluxation of the M.P. joints, then hammer toes. This condition produces concomitant signs such as pressure points under the foot, some of which may cause the feet to look like those of diabetics. This chain of events, I think, can be prevented if the patient can rest his foot enough so that he has no need to protect it secondarily with his muscles. The foot can then become relaxed, and specific exercises can be prescribed.

The patient can initiate a program of exercises, particularly for the intrinsic muscles of the foot. This program should *not* consist of toe-curling, though that is the exercise most commonly advised. The patient's flexors are already too strong, and I don't know why he should exercise them further. What he needs is a muscle that will flex the first phalanx, and the only muscle capable of doing that is the intrinsic muscle of the foot. Therefore the intrinsic muscle should be exercised from the very beginning, and if the patient exercises it sufficiently and keeps it strong, and if he keeps his foot relaxed enough to remain flexible, many of the toe deformities can be prevented. This is one area in which exercises can be very helpful.

Furthermore, if the patient has peroneal spasm, a common therapy has consisted of anesthesia, manipulation of the foot and immobilization of it in a cast. I think immobilization is exactly what we *do not* want to do in rheumatoid arthritis, for we thus would immobilize all of the non-involved joints and would lose flexibility of the foot. It is more rational to keep the patient sufficiently free from weight bearing, even to the point of putting him on crutches to get him over the episode of peroneal spasm. Then he can be started on a series of exercises.

If I may digress for a moment, I'd like to say that there is value in a rheumatism or arthritis center, for at such a clinic the patient with early rheumatoid arthritis has a chance to see patients suffering the late effects of the disease. In such a ward, the doctor can say, "Look; you can prevent that!" and the patient is apt to listen to him.

TREATMENT OF POST-DEFORMITY CASES

Now let's discuss the group of patients in whom we have been unable to prevent deformity. Here I should mention hallux valgus, hallux rigidus, etc. I saw a little girl, eight years old, who had involvement of the subastragalar joint and who protected that joint by a varus position that became fixed. In the meantime, the rheumatoid disease had reached remission. The youngster had no more pain, but her foot remained in a position of deformity. It seems to me that this condition, if allowed to persist, will affect all of the other joints, and that it should be corrected.

Even though this child's rheumatoid condition was in remission, she was operated upon to correct the foot from varus position to neutral. She has since been followed for about 10 years, and has had no further recurrence of her arthritis. She again has a normally flexible foot, whereas if it had not been operated upon, I am sure it would still have been deformed today.

The second large group of deformities to which I referred are the cocked-up toes that become fixed and end up as hammer toes. Almost always associated with hammer toes, there will be a valgus deformity of the big toe—in other words, a bunion. In rheumatoid, the ground substance seems to give way to the point where the forefoot spreads, the metatarsal heads separate, and the separation produces a splay foot which becomes decompensated and symptomatic of a mechanical basis.

Supports can give temporary relief if the pressure points are under the metatarsal heads, but supports cannot take away the effect of pressure on the dorsum of the toe, and corns develop there. Each time the patient takes a step forward, he elevates his foot by using his extensors, and the extensors bring his hammer toes against the top of his shoe, thereby forming a callus. Foot supports do nothing to solve this problem. Occasionally an anterior heel on a shoe will give the patient some comfort, for with an anterior heel it is as though the patient were rocking his foot over a round, and thus he has no need to make his foot rise on tiptoe.

I shouldn't expect any of these secondary means to relieve or cure the deformity, however. All they do is to relieve the symptoms, and once the deformity has begun, it will progress in spite of these compromise therapies. So eventually, if the rheumatoid disease remains active, the patient will end up with a painful foot from subluxed metatarsals,

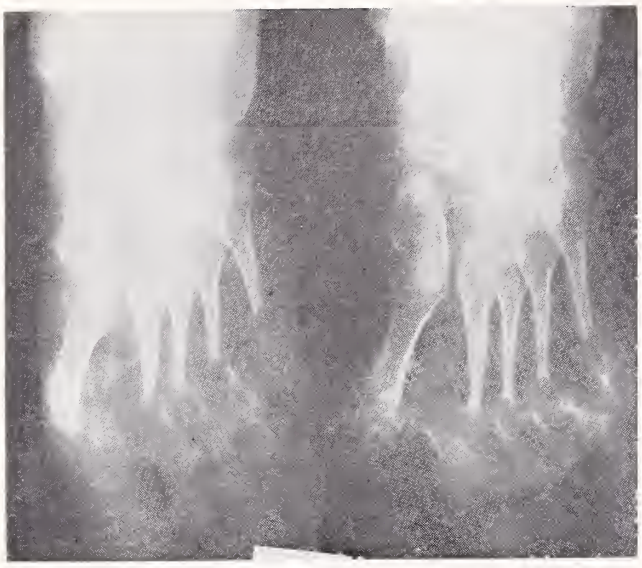


Figure 1

cocked-up toes with calluses and frequently a bunion, and with splaying of the forefoot.

Beyond conservative measures, what can we do? These people are really handicapped, they are already off their feet, they can walk only very short distances, and they can stand practically none at all. The only relief that I know of, for patients at this stage, is surgical.

Figure 1 shows what can be done in the case of subluxed metatarsals, painful plantar calluses, dorsal calluses, etc.—namely, the removal of the metatarsal heads, along with the base of the phalanx. This operation has been performed for a number of years, and has been modified occasionally, but in general we have learned three lessons regarding it: (1) When one removes the metatarsal head, he must also remove the base of the phalanx. If one leaves the base of the phalanx, there is a tendency for the patient to grow a false joint, because the shaft will grow out a spur toward the base of the phalanx, trying to reconstitute a joint. A total joint excision tends to reduce this tendency. (2) It is folly to remove one or two metatarsal heads if they are directly under a callus point, for ultimately the remaining heads will acquire the same kind of callus. Thus one does well to remove all four outer metatarsal heads. (3) It would be well to do a Keller procedure on the big toe at the same operation if the big toe is deformed or restricted at the M.P. joint.

In cases of resection where there has been very little regeneration of the bone at the site of the excision of the joint, patients are markedly more comfortable. Whereas when the normal person walks, he utilizes his toes and metatarsal heads to lever his takeoff, these people have no takeoff. They have lost the spring in their step. However, since previously their feet were so painful that they had no spring, they aren't conscious that their operation has deprived them of anything. There is no question that from a functional standpoint they have suffered a loss, but they are now more comfortable, and it is only rarely that we see them develop new calluses under the resected ends of their metatarsals.

Rheumatoid children who are protected at all times spend a good deal of their time in bed, and there is a tendency for their toes to drop into flexion as a result of gravity. Then as their rheumatoid condition remits, they are left with scarring, so that when the time comes for them to get out of bed, they have stiff metatarsal joints, particularly the one in the big toe. When they try to use this joint, they have the use only of the flexor muscle, and the toe tends more and more to bend under. This usually occurs only to the big toe because the flexor of the big toe is such a strong one. This condition is very disabling, for if one loses the dorsiflexion of the metatarsal joint of his big toe, he cannot stand on tiptoe. This condition becomes, in essence, a hallux rigidus. It must be recognized early, for if allowed to persist, the patient must walk on the side of his foot to circumvent the loss of motion in his big toe, and he develops secondary pains in his foot. I think this should be recognized early, and even though it is a deformity that requires operation, the surgical procedure can be considered a prophylactic measure designed to

Figure 2

Figure 3

keep the rest of the foot normally flexible. In the release of this deformity, one has to do a dorsal and a plantar capsulotomy, and frequently also a transfer of the flexor to the dorsum so that it may act as an extensor. These children then do very much better, and their gaits are much improved immediately.

ATYPICAL EFFECTS OF RHEUMATOID

There are a few atypical effects of rheumatoid disease. These are rather rare, but an example of what can occur is shown in Figure 2. Here, I show you the foot of an individual who had had rheumatoid arthritis for a number of years and had developed what was diagnosed as a tumor of the first metatarsal. In fact, at operation, it was found to be nothing but a large degenerate cyst which had occurred as a result of hallux rigidus. The cyst filled in very readily, and the patient has a functional joint today (Figure 3). This is another example of surgical therapy to restore motion and function, and to keep the other joints flexible and functional.

SUMMARY

I shall summarize by reviewing the points I have made that I think are important. First, keep rheumatoid arthritis in mind as a possible diagnosis whenever there is pain in a foot joint that is in any way chronic and non-responsive to mechanical treatment, even though it may be the first and only joint involved.

Second, keep in mind prevention of deformity! I think this is more important in the foot than in any other joint, for the foot is very important to weight-bearing, and when deformity occurs, it disables the individual in all of his daily activities that demand locomotion.

Insofar as indications for surgery are concerned, one's point of view must be prophylactic. The mere presence of deformity is inconsequential. Strangely enough, some people with rheumatoid can have severely deformed feet without being hindered at all, if they put on large enough shoes and if their disease becomes inactive. In cases of loss of ability to stand and to walk, I think it is important to resort to surgical therapy.

Ninth Blank Hospital Pediatric Conference

The Ninth Annual Pediatric Conference of Raymond Blank Memorial Hospital will be held in the auditorium of the School of Nursing at Iowa-Methodist Hospital, Eleventh and Pleasant Streets, Des Moines, on Thursday and Friday, April 8 and 9. The registration fee, $30, includes a luncheon ticket for each of the two days and a banquet ticket. Additional luncheon and banquet tickets are $1.50 and $6, respectively. For further information, address Charlotte Fisk, M.D., 3200 University Avenue, Des Moines 50311.

Thursday. April 8

9:00 a.m. "Abdominal Pain in Children": The ninth Lee Forrest Hill lecture—James M. Baty, M.D., pediatrician-in-chief, The Boston Floating Hospital

10:00 a.m. "Physiology of Respiratory Distress"—Donal Dunphy, M.D., head of pediatrics, University of Iowa College of Medicine

11:00 a.m. "The Hemolytic Anemias: Diagnosis and Management"—Carl H. Smith, M.D., professor of clinical pediatrics, Cornell Medical College, New York City
LUNCHEON served by the Raymond Blank Hospital Guild

2:00 p.m. CASE PRESENTATIONS by the Raymond Blank Hospital residents

3:30 p.m. "Vaccination Against Virus Diseases"—Saul Krugman, M.D., professor and chairman of pediatrics, New York University School of Medicine, New York City

5:00 p.m. BUSINESS MEETING of the Iowa Branch, American Academy of Pediatrics

6:30 p.m. SOCIAL HOUR AND BANQUET, Des Moines Club
"And Freely Speak"—Philip D. Jordan, Ph.D., L.L.D., professor of history, University of Minnesota.

Friday, April 9

9:00 a.m. "Diagnosis and Management of Purpuric Disorders"—Dr. Smith

10:30 a.m. CASE PRESENTATIONS by the Raymond Blank Hospital residents

11:30 a.m. "Differential Diagnosis of Respiratory Distress"—Dr. Dunphy
LUNCHEON served by the Raymond Blank Hospital Guild

2:00 p.m. "The Pediatrician and the Rash"—Dr. Krugman

3:00 p.m. "The Care of Acutely Ill Children in Their Homes"—Dr. Baty

Neonatal Spontaneous Gastric Perforation, With Survival

PAUL A. LA PORTE, M.D., and
RALPH E. WOODARD, M.D.
Fort Dodge

SPONTANEOUS GASTRIC perforation in the newborn has been reported infrequently in the medical literature, and only in the last decade have reports of survivals begun to build up. The purpose of this paper is to present one more case with survival, this one presumably associated with a congenital muscle defect.

LITERATURE

The first reported case of spontaneous gastric perforation in the neonatal period was described by Siebold in 1925.[1] Scattered cases were reported shortly thereafter, all of them diagnosed or proved at postmortem examinations. The first surgical repair of this entity was done in 1929 by Stern.[2] His work, unfortunately, was unsuccessful, but it stimulated others to attempt surgical repair. Leger,[3] in 1950, reported the first successful repair with survival. Ross[7] reported the second survival in 1951. But a review of medical literature in the English language as of January, 1963, reveals just 21 survivals in a total of 101 cases.

ETIOLOGIES, LOCATIONS AND CLINICAL PICTURE

The presumed etiologic agents in 75 cases of neonatal gastric perforation, as reviewed by Purcell,[5] are listed in Table 1.

In spontaneous perforation, causes 4, 6 and 7 need not be considered. A congenital defect in the musculature of the gastric wall, first reported by Herbut,[6] in 1943, appears to have been the most common histologically-proved etiology. The proposed mechanism of perforation in such cases has been gaseous distention of the stomach and subsequent disturbance of blood supply in the area where the gastric wall was thin, causing necrosis and perforation.

An additional two etiologic agents not mentioned in Table 1—intracranial hemorrhage and birth trauma—were alluded to by Reams *et al.*[4]

TABLE 1

PRESUMED ETIOLOGIC AGENTS IN 75 REPORTED CASES OF NEONATAL GASTRIC PERFORATION[5]

	Cases
1. Congenital muscle defect	25
2. Gastric ulcer	15
3. Unknown	17
4. Trauma secondary to nasogastric or attempted endotracheal intubation	6
5. Sepsis	2
6. Resuscitation with mask	3
7. External trauma	1
8. Obstruction distal to stomach	6

Among 21 survivors, the locations of perforation, as reported by Reams *et al.*,[4] have varied as listed in Table 2.

TABLE 2

LOCATIONS OF PERFORATIONS IN 21 SUCCESSFULLY REPAIRED PATIENTS[4]

	Cases
Greater curvature	11
Lesser curvature	3
Posterior wall	3
Pylorus and pre-pyloric area	3
Fundus near the cardia	1

Although the suspected etiologies and locations of these perforations have been varied, the clinical pictures in 90 cases, as reviewed by Reams *et al.* have been remarkably similar. The baby, either male or female, small in size but not premature, has usually been the product of an uneventful, normal delivery. Typically, symptoms have appeared on the third day of life. At that time the baby has begun to eat less; to vomit, sometimes with hematemesis; to become distended, with a quiet abdomen; and to become dyspneic. Some infants have developed cyanosis, and some of them have developed melena. An occasional child has had edema of the abdominal wall. Although these

symptoms and signs have varied in prominence, two thirds of the children seen have had distention, dyspnea and an absence of bowel sounds. Seventy-five per cent of these babies can be expected to show free intraperitoneal air on radiographic examination, although one may have to take a lateral decubitus view along with the conventional flat and upright films of the abdomen in order to demonstrate this.

TREATMENT

The treatment for this condition is prompt surgical exploration and simple closure of the perforation. The survival rate is directly correlated with the promptness with which surgery is performed. This has been aptly shown by a survey done by Reams *et al.*,[4] which is summarized in Table 3.

TABLE 3

CORRELATION BETWEEN PROMPTNESS OF SURGERY AND SURVIVAL IN 90 CASES OF NEONATAL SPONTANEOUS GASTRIC PERFORATION[4]

	Cases	Per Cent Survivals
No surgery	38	0
Surgery in less than six hours	13	46
Surgery in less than 12 hours	26	42
Surgery after more than 12 hours	36	25

OUR PATIENT

D. R. was a 5 lb. 12 oz. baby born of a gravida 7, para 4, aborta 2 mother, on June 15, 1963. The family history was significant only in that there was a maternal aunt with a spina bifida. There had been no reported difficulty in previous pregnancies. This pregnancy had been complicated by a definite leakage of amniotic fluid beginning approximately 10 days prior to delivery and continuing until birth. The delivery itself had been complicated by an arm presentation, but delivery had been performed without version. Twenty-one days before the due date, labor had begun spontaneously, on June 14, 1963, and had been uneventful.

The baby had been born at 5:00 p.m., on June 15, and had required gentle mask resuscitation at birth. He had then been placed in an isolette, with oxygen and water mist, but when seen two hours after birth, he had appeared to be a normal, though small, male. At that time he had been removed from the isolette and started on three-hour feedings of dextrose water, at first, and half-strength SMA formula afterward. On June 16 he had been eating well, had lost only 1¾ oz. of weight, and had appeared normal despite a temperature of 95.2°F. At 8:00 a.m. on June 17, he had again appeared normal on physical examination. He had gained one ounce, his temperature had risen to 97.8°F., and findings on physical examination were otherwise unremarkable.

By 7:00 p.m. on that second day, however, the child had become fussy, was spitting after each feeding, and had passed seven watery stools. His physical examination again was essentially normal. A complete blood count showed a hemoglobin of 19.2 Gm./100 ml., a white blood cell count of 5,000/cu. mm., and a normal differential. The rather suppressed white blood count and the symptoms were thought to indicate sepsis. Blood, throat and stool cultures all grew out E. coli later, but they did not type out. The baby was started on 100,000 units of crystalline potassium penicillin G every 12 hours, intramuscularly, and 60 mg. of Chloromycetin succinate, intramuscularly, once daily.

By the following morning, the infant's third day of life, he seemed better hydrated, and had a weight loss of only ¾ oz. and a temperature of 99°F. Instead of his formula, he had been placed on half-strength modified Butler solution, orally, and seemed to be doing better on it. His stools were less frequent and better formed. He seemed less fussy, and also was spitting less. Sometime during the afternoon of that third day, however, he became more fussy, was noted to be eating poorly, and was spitting a yellowish fluid almost continuously. When he was seen at 7:00 p.m., he was definitely grunty, had obvious abdominal distention, was slightly icteric and had no bowel sounds. At that time he also had pitting edema of the abdominal wall. The complete blood count at that time was unchanged, and flat and upright films of the abdomen showed definite intraperitoneal air and free fluid (Figures 1 and 2). A perforated viscus was diagnosed, and a laparotomy was performed at 10:00 p.m. on that third day.

SURGICAL PROCEDURE

At approximately 10:15 p.m., the baby was placed under Vinethene and ether anesthesia. When the anesthesia was satisfactory, the abdomen was prepped with soap and water and Mercressin, and then draped to allow exposure for a right upper-paramedian incision. When the peritoneal cavity was opened, a rush of air and yellowish fluid was encountered. The fluid that was suctioned was identical with the Ionosol MB that had been given orally. Exploration of the stomach and duodenum was performed first. There were no unusual findings. The lesser sac seemed to be somewhat distended. The small and large bowel were examined, but no lesions were found. The bladder was somewhat distended. The lesser sac was then opened by dividing the gastrocolic and gastrosplenic ligaments. On inspection, the posterior duodenum and the antrum of the stomach were not unusual. However, high on the fundus of the stomach near the esophageal gastric junction, there was a vertical tear extending for approx-

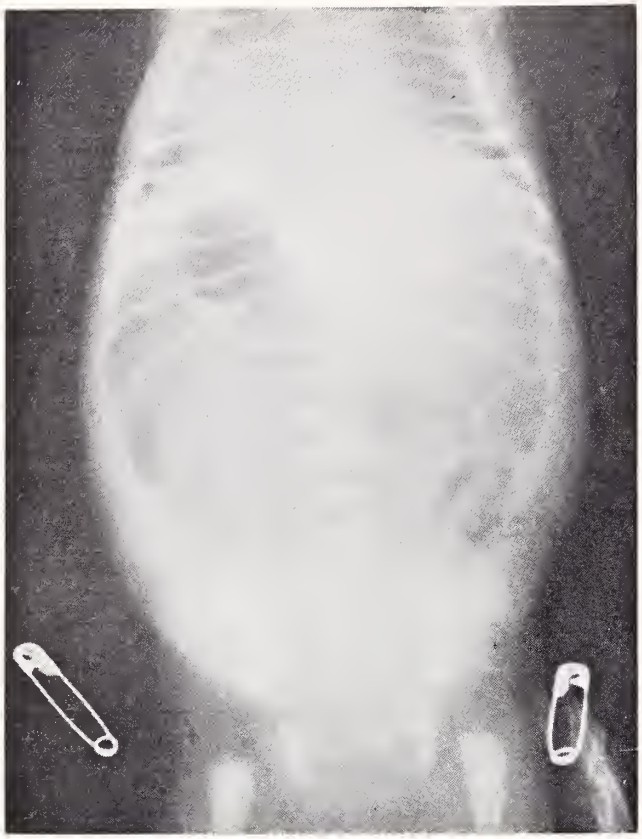


Figure 1. Flat film of the abdomen showing the pneumoperitoneum.

imately 1½ cm., and for a distance of about a half-centimeter surrounding this tear, the stomach wall was very thin and friable.

The rent was closed with a running 0000 chromic lock suture, and it was further turned in by means of 0000 chromic running lock suture. The gastrosplenic and gastrocolic ligaments were reattached to the stomach, the peritoneal cavity was flushed with warm saline, and the peritoneum and posterior rectus sheath were closed with a running 0000 chromic suture. The anterior fascia of the rectus muscles was approximated with interrupted 0000 silk, and the skin was approximated with interrupted 0000 silk. A dressing was applied. The baby was responding after the discontinuance of the anesthesia.

POSTOPERATIVE COURSE

The infant's temperature lowered to 97°F. during surgery, and during the first postoperative night frequent periods of apnea occurred, often requiring some stimulation. He was maintained in oxygen and in the incubator, and was given nothing by mouth. Antibiotics were continued, and an indwelling nasogastric tube was periodically aspirated by syringe. On June 19, his condition improved. The apneic periods had ceased, and the culture of the peritoneal exudate again showed E. coli, type 0119. Antibiotics were continued on that basis. On the evening of June 19, intravenous Butler solution was started at the rate of 10 cc/hr.

On June 20, the icterus was more marked, but the baby was clinically stable. A complete blood cell count showed a hemoglobin of 17.4 Gm./100 ml., a white cell count of 16,600/cu. mm., and a normal differential. A microbilirubin done at that time showed a total of 16.56 mg. per cent, with a direct of 0.38 mg. per cent. The baby was group A Rh E negative, with the remainder of the Rh factors positive, and a direct Coombs test was negative. The icterus was thought to be due to hyperbilirubinemia, possibly secondary to sepsis, and it was not thought due to hemolytic disease.

By June 21, the abdomen was flat, and bowel sounds could be heard. The nasogastric tube was removed, and dextrose water was begun on the following day. The icterus was fading by that time, and the baby seemed generally improved. On June 22 a complete blood cell count showed a hemoglobin of 18.2 Gm./100 ml., with a white blood count of 19,800/cu. mm., and 61 per cent segmented cells. A repeat microbilirubin showed a drop to 14.15 mg. per cent total bilirubin and a direct of 0.17 mg. per cent.

On June 23, the baby weighed 4 lbs. 10½ oz., was eating well and seemed otherwise to be in good condition. The concentration of the formula was gradually increased, as were the amounts. The antibiotics were discontinued on June 24, and the

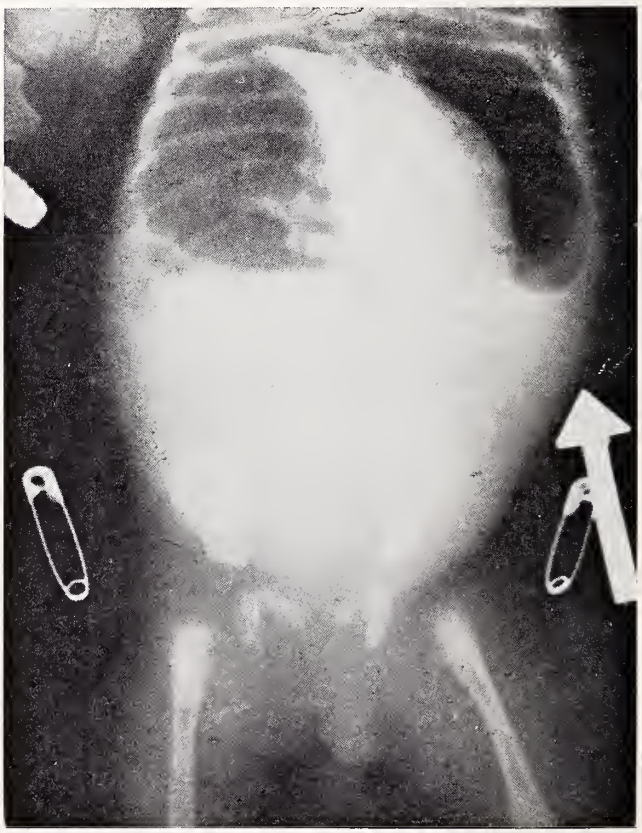


Figure 2. Upright film of the abdomen showing free air and fluid in the abdomen and outlining the liver.

sutures were removed on June 26, without untoward event. A complete blood count on June 29 showed a hemoglobin of 12.4 Gm./100 ml., with a white count of 14,500/cu. mm., and 50 per cent polymorphonuclear leukocytes. The baby gained progressively and thrived, and on June 30, weighing 5 lbs. ½ oz., he was discharged to his family physician's care.

The baby was seen for a follow-up examination on August 13, 1963, at the age of two months. He then weighed 9 lbs. 1 oz., and had a length of 23 in. His course at home apparently had been uneventful. On physical examination, he seemed a very well-developed, bright, alert two-month-old, in good general health. He had a very small umbilical hernia, but the abdominal incision appeared to be well-healed, and he had no complaints related to the gastrointestinal tract.

In summary, this small infant was delivered after a rather difficult arm presentation. He subsequently developed a spontaneous perforation of the stomach, probably secondary to a congenital thinning of the gastric musculature. The question of sepsis arose in this case. It is uncertain whether the sepsis preceded or accompanied the perforation on his second day of life, the day prior to the appearance of marked symptoms. The purpose here has been to review the literature on this condition and to present one more case of survival.

REFERENCES

1. Siebold, cited in Thiele, P.: Ueber Geschwuersbildungen des Gastroduodenaltractus in Kindesalter. Ergebn. Inn. Med. Kinderheilk., **16**:302, 1919.

2. Stern, M. A., Perkins, E. L., and Neesa, N. J.: Perforated gastric ulcer in two-day infant. Journal-Lancet, **49**:492-494, (Nov. 1) 1929.

3. Leger, J. L. *et al.*: Ulcère gastrique perforé chez un nouveau-ne avec survie. Un. Méd. Canada, **79**:1277-1280, (Nov.) 1950.

4. Reams, G. B., Dunaway, J. B., and Walls, W. L.: Neonatal gastric perforation with survival. Pediatrics, 31 (1) Pt. **1**:97-102, (Jan.) 1963.

5. Purcell, W. R.: Perforation of stomach in newborn infant. Am. J. Dis. Child., **103**:66-71, (Jan.) 1962.

6. Herbut, P. A.: Congenital defect in musculature of stomach with rupture in newborn infant. Arch. Path., **36**:91-94, (July) 1943.

7. Ross, M., Hill, P. S., Jr., and Haas, C. M.: Neonatal rupture of stomach. J.A.M.A., **146**:1313-1314, (Aug. 4) 1951.

University of Iowa
College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 17-YEAR-OLD, unmarried white female, para 0, gravida 1, had been a diabetic since the age of 11. She was poorly controlled, and had had repeated episodes of diabetic acidosis. She had been admitted to the University Hospitals on 20 occasions for regulation of her diabetes. She consistently presented a 3 to 4+ glycosuria.

She had been closely followed by the Departments of Obstetrics and Internal Medicine during the early parts of her pregnancy. Three months before the expected date of delivery, she had been found normotensive and without evidence of albuminuria or edema. At that time, the patient was requiring 16 units of regular insulin in the morning, 64 units of NPH in the morning, and 18 units of NPH in the evening.

Three days prior to her admission to the University Hospitals, the patient's mother said she had noted the development of mild facial and leg edema, but no edema in the hands. The patient had no complaints of visual disturbances, epigastric pain or headache.

Early in the morning on the day of admission, when her mother returned home from work, the patient had complained of epigastric pain, which she described as predominantly a fullness. Shortly afterward, she apparently had had an epileptiform seizure, though her mother failed to recognize it as such. The patient had then become comatose.

The significance of the coma hadn't been apparent to the mother, but later in the morning when the girl couldn't be roused, a local physician was called. The patient received her morning dose of insulin, and was transferred to the local community hospital.

On admission there, her blood sugar was reported as 225 mg. per cent and the acetonuria negative. A lumbar puncture was done, and reported as negative. The patient was given glucose through a Levin tube and by hypodermoclysis. It was stated that the patient probably had frequent minor seizures during the remainder of the day. Her temperature was 105°F. (rectal). Oliguria was present. The white blood cell count was 23,000/cu. mm., and the hemoglobin level was 13.6 Gm./100 ml.

The patient was transferred to the University Hospitals that evening, and on admission she was in deep coma. Her body temperature was 103°F. (rectal), her blood pressure was 130/80 mm. Hg, and her respiratory rate was 28 to 30/min. Her pulse rate was 140/min. and regular. Physical findings revealed marked periorbital edema, with some facial puffiness. Examination of the eye grounds revealed some edema, but the discs were poorly seen. There was no evidence of hemorrhage. The uterine fundus extended up 25 cm. from the symphysis, and was symmetrical and not irritable. No fetal heart sounds were audible. The remainder of the physical examination was within normal limits, except for hypoactive reflexes in all extremities. Her only responses consisted of mild movements to painful stimuli.

The initial studies revealed a hemoglobin level of 13.5 Gm./100 ml., and a white blood cell count of 11,000/cu. mm. The peripheral blood smear showed 10 per cent bands, 82 per cent segmental leukocytes, 3 per cent lymphocytes and 5 per cent monocytes. Urinalysis revealed a pH of 6, many granular casts, 4+ albuminuria, 4+ glucose and 2+ blood. There was an insufficient quantity of urine for a measurement of specific gravity. The chest roentgenograms were interpreted as normal. Daily laboratory studies are listed in Table 1.

The impression at that time was fetal death secondary to acute renal disease, probably pyelonephritis, accompanied by insulin shock. She was treated with 150 Gm. of glucose intravenously, but failed to respond. Her urinary output measured about 5 ml./hr. She was started on penicillin and streptomycin, and received them daily until her death.

Shortly after admission, the patient began having spontaneous uterine contractions, and she was delivered of a stillborn, macerated female infant weighing 1,430 Gm. She continued comatose and was oliguric, her highest recorded urinary output being 15 ml./hr. There were no other changes in her condition. On the following day, the urine showed 2+ proteinuria and 2+ glycosuria. Total serum proteins were 4.8 Gm. per cent, with a normal ratio. Bilirubin was 13.5 mg. per cent, and fibrinogen was 302 mg. per cent. Platelets were 75,000/cu. mm., and blood glucose was 166 mg. per cent. The pulse remained in the neighborhood of 140/min., and blood pressure at 130/100 mm. Hg. The patient weighed 165 lbs. She was given 250 ml. of packed red cells.

During the next 48 hours the patient's urinary output increased to approximately 80 cc./hr., and the specific gravity ranged from 1.010 to 1.014. She remained comatose. The guaiac test on the stool was negative, but it was positive on stomach aspirate. Placental culture revealed a few Escherichia coli.

She continued to be titrated with regular insulin and hypertonic glucose. The following day a urine culture grew Pseudomonas aeruginosa. Her general condition remained poor. Her blood pressure ranged in the neighborhood of 150 to 170 systolic and 90 to 110 diastolic.

The following day, her general condition worsened, and she developed a tachycardia of 140/min. Her blood pressure was 176/110 mm. Hg, and her temperature was 101.2°F. She received another unit of packed red cells. The hemoglobin level that day was 8.4 Gm. per cent. She weighed 158 lbs.

On her final day, the stool tested 4+ for blood. Her bilirubin level was 0.3 mg. per cent. Her platelets were 360,000/cu. mm. She had spells of hyperactivity, followed by relative calm. Her course was progressively downhill and afebrile. The abdomen was soft, and minimal bowel sounds

TABLE I
LABORATORY FINDINGS

	Hb. Gm/100 ml.	WBC/cu. mm.	Htct. %	Intake ml. Dextrose in Water	Total Urine Output ml/day	BUN mg. %	Creatinine mg. %	Serum Uric Acid	Na mEq/L	K mEq/L	Cl mEq/L	CO_2 mEq/L
Day of entrance	13.5	11,000	38	1,650	60	45			141	4.1	110	20.0
1st day	10.1	20,000	31	1,125	200	55		16.5	136	4.0	102	18.9
2nd day	7.2	18,300	24	950	697	78	5.9	18.4	130	4.6	92	18.4
3rd day	9.3	16,400	29	2,500	1,654	75	6.6		129	4.2	98	20.1
4th day	8.4	22,900	26	2,500	1,758	60	6.2		128	3.7	94	19.4
5th day	9.0	18,600		1,850	2,727	75	5.8		137	4.8	100	23.9

were audible. Her pulse rate continued to be rapid, her blood pressure gradually fell, and her pulse rate rose.

The patient expired early on the following morning, five days after admission.

CLINICAL DISCUSSION

Dr. David A. Culp, Urology: Mr. Landhuis will discuss the case for the junior students.

Mr. J. Landhuis, junior ward clerk: We believe this lady had diabetes mellitus, eclampsia with complications, and pyelonephritis, and that her death was due to the complications of eclampsia. Since she did have rather severe diabetes mellitus, one must rule out the most common complications of that disease which can result in coma. The first of these is insulin shock. Convulsions can be associated with insulin shock, but the patient's blood sugar on admission to the local hospital shortly after her first seizure was 225 mg. per cent, which is far above normal. That finding probably rules out insulin shock. In addition, she was given large amounts of glucose on admission to the local hospital and also when she arrived here, with no response.

The other complication is diabetic coma, but convulsions are seldom seen with it. In addition, her urine was negative for acetone, and her CO_2 values while here were always close to 20 mEq/L, a value too high for diabetic acidosis.

A lumbar puncture was reported to have been negative at the local hospital. That rules out a bacterial meningitis, cerebral hemorrhage, and increased intracranial pressure from any cause, and makes the possibility of a brain tumor unlikely. She had no history of epilepsy, so we consider this possibility unlikely.

Acute glomerulonephritis should be considered in any person with hypertension, edema, albuminuria, hematuria and oliguria, and convulsions are sometimes seen in this disease. We have no evidence of a preceding streptococcal infection, and at no time during the course of her illness did she exhibit a rash such as one sometimes finds in acute glomerulonephritis. The specific gravity of her urine was low. In acute glomerulonephritis, the urine usually has a high specific gravity. The fever generally doesn't exceed 101°F., but the protocol reports temperatures of 105° and 103°F., and we aren't sure how acute glomerulonephritis could explain the patient's gastrointestinal tract bleeding.

Acute pyelonephritis should be considered. There is a greater incidence of this condition in pregnant women and in diabetics than in the normal population. A urine culture grew Pseudomonas aeruginosa. The patient is not known to have complained of chills, fever or flank pain. There is usually only a minimal amount of protein in the urine in pyelonephritis, but hers contained protein in large amounts. We think that pyelonephritis was present, but that it contributed little to her death.

We think eclampsia best explains the patient's death. It is more likely to occur in women pregnant for the first time, as was this patient. She was in the last trimester of pregnancy, the time at which it usually strikes. The onset of eclampsia is often gradual, with edema noted first, but it may be quite abrupt. This patient had edema several days before her first seizure, and she also complained of epigastric pain, which is a common sign in pre-eclampsia. Her blood pressure ranged from 150-170 systolic and from 90-110 diastolic while she was here at the University Hospitals. The accepted blood-pressure levels in eclampsia are 140/90 mm. Hg, or above. So this girl was plainly hypertensive. Her urine contained protein in large amounts, and contained epithelial and granular casts and blood, all of which can be found in the urines of eclamptics.

Unfortunately, her optic discs were not well visualized, so it is not known whether she had papilledema, but she did have edema of the retina, which is commonly seen in toxemia. She had elevated serum uric acid, which is also seen in eclampsia. The CO_2 value was consistent with toxemia. Her bilirubin was 13.5 mg. per cent on her second hospital day. We think that can be explained by intravascular hemolysis, sometimes seen in eclampsia.

From the protocol, we learn that she was bleeding from her gastrointestinal tract. This, plus her delivery, may account for the drop in her hemoglobin level after admission. The gastrointestinal bleeding may be explained by clotting deficiencies, sometimes found in patients with severe eclampsia. Oliguria is common in eclampsia, and explains the elevated BUN and serum creatinine. An elevated white cell count is often found in an oliguric patient. On the patient's last day, she had a rise in pulse rate and a fall in blood pressure which we think indicated cardiac failure.

In summary, we feel that diabetes did not cause the patient's death. Rather, we think she had eclampsia with all of its complications of oliguria, bleeding tendencies, intravascular hemolysis with a possible tubular necrosis, and cardiac failure. Pyelonephritis was present, but incidental.

Dr. Culp: Thank you. We shall now call upon Dr. Howard, of the Department of Obstetrics and Gynecology, to discuss the case.

Dr. William F. Howard, Obstetrics & Gynecology: The problems with this patient began a rather long time ago. She was a young diabetic—probably a Class C or Class D Priscilla White classification—and her diabetes had been poorly controlled. The local physician and our diabetic service had seen her on numerous occasions for diabetic coma and insulin shock. I think her situation was exemplified by her mother's being so

nonchalant about the girl's coma that she ignored it for a long period of time.

I am certain that the first thought to enter the local physician's mind was that some complication of the patient's diabetes had occurred. The first complication that one thinks of is either insulin shock or diabetic coma. The next possibility would be toxemia of pregnancy. Twenty per cent of all diabetic patients develop toxemia of pregnancy. I am certain he thought of epilepsy, but it is rare for epilepsy to originate in the first pregnancy or during a subsequent pregnancy. He could have thought of uremia, but again she had no history of renal disease that was known to him. She could have been suffering from hypertensive encephalopathy, but that is rare in a 17-year-old girl without a previous history. I am certain he looked in her eye grounds and did a spinal tap. The latter ruled out both the hypertensive encephalopathy and most other neurologic conditions.

The findings might also represent acute glomerulonephritis, a condition which is exceedingly difficult to rule out. As you know, such patients have the same renal findings as eclamptics. Eclamptics can have any type of renal findings. We occasionally see gross hematuria, along with white cells, casts, and usually a severe proteinuria. He ruled out insulin shock and also diabetic coma by virtue of her blood-glucose levels. The patient received glucose and failed to improve.

I think the most important initial finding when the patient was seen at this institution was her elevated body temperature. It was 103°F., a classical finding in severe eclampsia. When the temperature goes over 102°F., the mortality rate starts around 40 per cent and goes straight up. She had tachycardia, which again is characteristic of severe eclampsia. Another positive finding for the diagnosis of eclampsia is a deep coma from which the patient cannot be aroused. This girl was questionably jaundiced. I say "questionably" because there is no reference to jaundice in her chart, but a serum bilirubin was run at the time of her admission, and it was elevated. The patient's eye grounds were negative for the cardiovascular changes which can occur with eclampsia, but a most important fact was that she had severe oliguria. Severe oliguria is rare with pyelonephritis or acute glomerulonephritis. Dr. Flocks says he has seen only two or three such cases in his lifetime. It is rare, especially during pregnancy. Oliguria was present when she reached us, though it hadn't been when the local physician saw her. The patient, therefore, did have eclampsia.

Further evidence was the presence of a dead fetus. In chronic renal disease, babies die, but they die slowly. They don't die suddenly. This baby died suddenly. Whatever illness this girl had was of sudden onset, since we had seen her within the past week and she had been fine. The history of facial edema is characteristic of toxemia of pregnancy. The laboratory finding of an elevated blood urea nitrogen has been rare in eclamptics whom we have seen at this institution. The BUN is usually normal; in fact, it is rare for it to be abnormal. Uric acid is almost always elevated, but of course a uric-acid measurement cannot be obtained in an emergency, and the examining physicians didn't have the benefit of this at the time of her admission. Her electrolytes were normal. So I think the working diagnosis should have been that of a young nulliparous diabetic patient who probably had renal vascular disease to explain her elevated BUN. Then she had superimposed eclampsia. These patients can go along for days with oliguria, and the BUN will stay normal but the uric acid will rise very high.

There are other positive findings that go along with this diagnosis. A low platelet count occurs during eclampsia. Increased bilirubin is rare in eclampsia, but when it does occur, the mortality rate is about 70 per cent. The urinary output increased following delivery—another classical sign of eclampsia. Not only did the urinary output increase but the blood pressure increased. I feel that the normotensive level (if you want to call 130/80 mm. Hg normal in a 17-year-old girl) was on the basis of central nervous system changes following her repeated seizures. This isn't unusual following eclamptic seizures. The blood pressure is usually markedly elevated prior to seizures. Her urinary output increased after delivery, and there was a decrease in her urinary protein, although this can be misleading because of the increased amount of urine.

Now as to the cause of this girl's death. Following delivery and when an eclamptic starts to improve, hemodilution occurs. One can gauge the severity of an eclamptic or toxemic process by the amount of hemoconcentration. We frequently see hematocrits of 45, and then two days postpartum, when the diuretic phase is instituted, the hematocrit falls to 30 or 33. There is where we erred with this patient. We attributed the falling hemoglobin level to clinical improvement, even though she was still in coma. I think the coma was due to irreversible central nervous system changes, but her vital signs revealed that her eclampsia was indeed getting better. Actually, I think the cause of her death was bleeding from some type of stress ulcer in the gastrointestinal tract. It was recognized late and she was given packed cells, but there was little improvement and she died.

The most common cause of death in eclamptics is a cardiovascular accident, but I don't believe that was the cause of this patient's death. Congestive heart failure is also a common cause, and it is the most common cause at this institution, where we lose approximately 9 per cent of all eclamptic patients. The third most common cause is probably what we call the "fading out" of eclamptics. They just die, and we really don't

know why. They have so many things going on in so many organs that they just deteriorate. My view of the sequence of events is as follows: The patient was a diabetic. She had vascular disease and superimposed toxemia manifested by a severe eclampsia which probably was irreversible at the time when her family physician saw her. She had irreversible changes in the brain. She then developed a stress ulcer that was the immediate cause of her death.

Dr. Frederick W. Stamler, Pathology: I'm interested in your statement about temperature elevation. Can you correlate that with anything else? For instance, is it correlated with fetal death? Does it occur after convulsions, or might it occur before convulsions? Does it have any relationship with convulsive behavior or anything else?

Dr. Howard: Temperature elevation is correlated with tachycardia and the severity of the disease. I can't say whether it is related to fetal death, but once a girl runs a temperature over 102°F., she is a severe eclamptic, and the physician's prognosis should be exceedingly guarded.

Dr. Stamler: Then the temperature elevation isn't necessarily associated with any demonstrable infection?

Dr. Howard: No, but as Dr. Kirkendall will tell us, eclampsia is a clinical diagnosis. All it means is that the patient is hypertensive, has proteinuria and edema, and then has convulsions. There can be many causes for it. You were thinking of acute pyelonephritis?

Dr. Stamler: Not necessarily. I was wondering whether you had anything specific to correlate with the temperature rise.

Dr. Howard: The severity of the disease. It's supposed to be due to anoxia of the brain, but I don't think that has been proved.

Student: How heavily do you rely on epigastric pain to suggest or make you suspect the course the patient is following?

Dr. Howard: We look for it in people who have pre-eclampsia, and if they suddenly develop epigastric pain (supposedly due to a stretching of the liver capsule), we say that eclampsia is imminent. We sedate the patient heavily, and give her magnesium sulfate. Epigastric pain is present in about half of the eclamptics before they convulse.

Student: Could a woman be normal today and a severe eclamptic tomorrow? How fast does eclampsia usually occur?

Dr. Howard: Rather rapidly. I'd like to tell you an unusual story. A husband and wife had been down in Nashville. They were driving home, and she was fine. She had no symptoms, but of course eclampsia is an asymptomatic disease, and the lack of symptoms is a part of the problem. She had been seen two days earlier, in Nashville, and had been fine. She suddenly began having convulsions in the car, and as he drove from Nashville to Indianapolis, she had one seizure after another. Eclampsia is just that quick. That is what makes people think of the humoral mechanism in this disease.

Student: What was the neurologic examination like? Was the patient hyperreflexive?

Dr. Howard: I didn't see her at the time of her admission. She is said to have responded somewhat to painful stimuli, but I think she was regarded as hyporeflexive. But again, in the postconvulsive state, such patients are hyporeflexive until they get ready to convulse again.

Dr. Culp: If there are no other questions, I'd like to call on Dr. Stamler to present the pathologic findings.

Dr. Stamler: Before discussing this case, I should like to make a few remarks about the pathology of eclampsia. It is a disease that has interested pathologists as well as clinicians for many years.

It was not until the advent of the electron microscope that any lesion was accepted as specific for eclampsia or pre-eclampsic toxemia. Then the renal lesion generally spoken of as glomerular capillary endotheliosis was discovered. Its name designates changes in the glomerular capillaries in which the endothelium becomes swollen and vacuolated, and shows inclusions of electron-dense material. Indications of this type of lesion had been suspected for many years, but the magnification and resolution of light microscopy had been insufficient to reveal the nature of the alteration. Only in recent years, then, has this been established as the basic and the only pathologic change that is truly specific for the disease.

There are many lesions which are rather characteristically found in patients who die of eclampsia. Lesions of one type are associated with vascular thrombosis, and they may be present in the renal vessels, including the glomerular ones. They may be found in other organs such as the adrenals and the spleen, and in some cases they are widely distributed in the pulmonary vessels, liver, brain, heart and other organs. This process may involve the pituitary, with infarction and destruction of the gland, and as a consequence, surviving patients may develop hypopituitarism. There are also the complications which have been mentioned in relation to hypertension associated with the disease, such as cardiac failure, pulmonary and cerebral edema, and hypertensive encephalopathy.

The specific lesions of the renal glomeruli are best demonstrated by biopsy material, usually obtained as percutaneous needle biopsies, which allow the very prompt fixation and processing of tissue that is necessary for successful electron microscopy. By this technic it has been shown that the lesion appears very early in the course of toxemia, that the severity of the anatomical changes correlate rather well with the clinical severity of the disease, and that it is a reversible lesion that clears rather rapidly following the patient's recovery from toxemia. Renal biopsies taken with-

in a period as short as nine days following parturition have shown clearing of this endothelial lesion of the glomerular capillaries.

In autopsy material, we usually can't show very convincing changes of this sort, and that was true in the present case. The kidneys were rather large, swollen and pale, with no evidence of pyelonephritis. Microscopically, a number of changes were shown. The glomeruli were rather large, swollen and ischemic in appearance. There was rather extensive tubular disease, with a number of casts, mainly in Henle's loops and distal convoluted tubules. Many of the tubules showed prominent nuclei and very little cytoplasm. The appearance was compatible with the recovery phase following an ischemic episode or some other event causing acute renal-tubule degeneration just short of necrosis. There was thickening of the axial vessels of the glomerulus, with perhaps some diffuse thickening throughout.

This patient had childhood diabetes of some years' duration, and the changes were more suggestive of the early phase of diabetic glomerulosclerosis than of eclampsia. In attempting to evaluate the endothelial component, we noted capillary loops that were cut more or less transversely, appeared rather smudgy or occluded, and certainly were almost completely bloodless. This did fit with the concept of endotheliosis, although not very convincingly. The electron microscopic study of this material was unsatisfactory as a result of postmortem autolysis. The liver was very extensively involved with hemorrhage and coagulation necrosis, and there were a few visible portal-vein thrombi. The necrosis probably was of four or five days' duration, and though it didn't give us a very accurate indication of its pathogenesis, it was consistent with the thrombotic complications of eclampsia.

The pancreas was rather small and seemed to have a scarcity of islet tissue, but most of the islets found were essentially normal in appearance, with evidence of degenerative changes in an occasional islet. There was rather noticeable intimal streaking of the aorta, with subintimal lipid deposits containing cholesterol clefts, and large pale phagocytes containing lipid. This quite unusual degree of atherosclerosis in a 17-year-old girl was probably a complication of her diabetes.

The brain showed a large amount of neuronal damage. This was very extensive and diffuse, and was of the type usually designated anoxic neuronal degeneration. It was characterized by eosinophilic staining of the cytoplasm of the neurons and pyknosis of the nuclei. There was perivascular vacuolization also, consistent with edema, but the notable thing was the very widespread involvement of neurons in what I feel sure was an irreversible change. These were actually necrotic neurons, and they were indicative of the severe cerebral sequelae that this patient would have exhibited had she survived. A section of the hypophysis showed a rather sizeable infarct of the anterior lobe, which is one of the complications of toxemia or eclampsia that may be on a thrombotic basis, although in this case no thrombi were found.

Several small superficial acute gastric ulcers were found, with several eroded vessels as the source of massive hemorrhage. The stomach contained 1,400 ml. of blood or very bloody fluid, and there were massive accumulations of blood throughout the gastrointestinal tract. I think it was evident that the patient died of this, though it probably was not a direct complication of eclampsia. Rather, it was secondary to central nervous system disease, which may result in this type of acute gastrointestinal ulceration.

Although we were unable in this case to demonstrate the typical glomerular endothelial lesions of eclampsia, I feel that we are justified in considering this as a case of eclampsia, with some of the many complications that may occur in this disease.

Are there any questions about these findings?

Student: Was the fetus studied at all?

Dr. Stamler: The fetus was studied, as were the placenta and the fetal membranes. The fetus was stillborn and rather badly macerated at birth. One rather controversial finding in this case was that there may have been bilateral renal cortical necrosis of the fetus. Renal cortical necrosis is one of the findings that may occur in the mother in eclampsia, but I know of no reports of its occurrence in the fetus, and we're not quite sure in this case because of the degree of autolysis that this stillborn infant showed, generally. The cortices of the kidneys were almost completely necrotic, and other tissues were less severely involved. This phenomenon was rather hard to evaluate, since renal cortex typically undergoes rapid autolysis. As far as the placenta was concerned, nothing very specific was found.

Student: When you perform autopsies on diabetics generally, do some of the islets usually resemble the ones you found in this patient? You said that in this case the pancreas was small and that the islet cells which were present looked essentially normal. Were these findings typical?

Dr. Stamler: The findings are rather variable. In childhood diabetes, which comes on rather abruptly, there sometimes has been rather complete destruction of islet tissue by one means or another. In cases that have gone on for years, one finds very extensive atrophy and hyalinization of the islets. We can go a little further with our examination than was done in this case. Specific staining for beta granules as an indication of insulin production can be done, and in some cases the stains indicate very deficient production of insulin in islets that appeared essentially normal by the usual histologic preparation.

Dr. Culp: If there are no further questions for Dr. Stamler, I'll ask Dr. Stone whether he'll discuss, for a few moments, the complicating factor of the diabetic state.

Dr. Daniel B. Stone, Internal Medicine: It is always difficult to care for an insulin-dependent diabetic, and I think the difficulties are greater when the patient is unconscious and oliguric. Perhaps the most difficult challenge comes when the patient is eclamptic, for eclamptic people are sick all over.

I don't have time to discuss this situation except in general terms. The objectives in treating a diabetic patient are at three levels. At the least sophisticated level of therapy, all one has to do is to try to prevent acidosis or insulin shock. When one gets more sophisticated, he tries to relieve the symptoms of uncontrolled diabetes. When he gets more sophisticated still, he aims for normoglycemia or even for experimental objectives. The most popular experimental aim at this time is the prevention of hyperlipidemia.

When one is confronted with the situation that existed in this girl, he has to accept the least sophisticated objective. He tries to prevent diabetic acidosis and insulin shock. He is wise to use the shortest-acting and most flexible insulin. This is regular insulin or semi-lente insulin, with a three- to four-hour range of maximum action. In this girl, we couldn't estimate the dose of insulin from the result of urinalysis, so we obtained regular estimations of the blood-sugar concentration, and watched for ketonemia as a sign of diabetic acidosis. I think one can't rely on any sliding scale or predetermined dosage.

Student: Did this patient manifest the adrenocortical changes of diabetes?

Dr. Stone: Those were the other complications which worried us in this girl. The most important effects of glucocorticoids on intermediary metabolism are enhanced gluconeogenesis from protein, increased formation of both glucose and glycogen, possibly peripheral inhibition of insulin action, impaired fatty-acid synthesis, and possibly an increase in fatty-acid oxidation. All of these favor hyperglycemia and ketoacidosis. We didn't know whether this girl had enhanced glucocorticoid levels in her blood as a result of all that was going on, or whether she had infarcted her anterior pituitary and was like a Houssay animal. This constituted another challenge in therapy.

Dr. Culp: Dr. Kirkendall, do you have any comments in regard to the renal lesions in this particular problem?

Dr. Walter M. Kirkendall, Internal Medicine: My particular interest in patients who have toxemia has arisen from my attempts to reconstruct the histories of patients who have hypertension. Many times one gets the story that a patient has had hypertension, proteinuria and edema during pregnancy, one or more times, many years before permanent hypertension was actually noted. I have been interested in using this information as a basis for assessing how long such a patient has had vascular disease.

The literature concerning toxemia of pregnancy has been confused by two major problems. First, until recently there has been no good experimental model to simulate the person with eclampsia. For this reason, all observations concerning the disorder have had to be made in clinical situations, and much of the confusion has arisen because such observations have been made during tense clinical moments when a patient's life has been in danger. Such circumstances are not conducive to objective thinking or planned experiments. In the last few years, disease states have been developed in pregnant animals which parallel the human eclamptic picture. It is certain that fundamental information will come from this source to clear up many points of confusion concerning the eclamptic.

The second major problem is the great confusion in the literature about the many diseases which cause edema, proteinuria and hypertension during pregnancy. Only in the last few years has there been general agreement on the one specific lesion the patient with eclampsia has—namely the renal lesion which Dr. Stamler pointed out. It now is clear that many other lesions which are seen in other parts of these patients' bodies and the many other metabolic changes which occur are non-specific and may be seen with a variety of diseases. For instance, the patient with glomerulonephritis, essential hypertension, pyelonephritis or other long-standing kidney diseases may develop an increase in blood pressure, proteinuria and pedal edema during pregnancy, but her course during pregnancy and after gestation may be—indeed usually is—quite different from that of the patient who has eclampsia. Because most studies have been accumulated without the aid of renal biopsies from patients who have demonstrated hypertension, proteinuria and edema, it is certain that the conclusions reached don't necessarily reflect the situation in the patient who has only eclampsia.

Thus, the value of the specific lesions noted in the kidney is that physicians are able, with reasonable assurance, to identify the patient who has pure eclampsia. From the information which we now have, it appears that the patient with eclampsia gets over the renal lesions relatively soon after pregnancy has been either interrupted or completed, and she usually has no serious vascular disease that predisposes her to hypertension later in life. This situation contrasts with that of the patient who has hypertensive disease from other causes and who then develops acceleration or an increase in hypertension, with edema or proteinuria, during pregnancy. This patient is much more likely to have more severe hypertension in the future, and is especially likely to have trouble

during future pregnancies, probably because of the renal damage. I think we should be cautious for the moment about interpreting these data, for the number of patients on whom we have information is small. However, if the patient has the specific lesion of eclampsia but no other vascular disease, it is our current belief that she isn't likely to develop hypertension in later years.

SUMMARY OF NECROPSY FINDINGS

Eclampsia
- a. Diffuse renal glomerular endotheliosis and acute anoxic tubular degeneration.
- b. Hepatic necrosis and hemorrhage, focal.
- c. Focal necrosis, anterior pituitary.
- d. Cerebral edema, diffuse, with anoxic encephalopathy.

Diabetes mellitus, juvenile, with early diffuse glomerulosclerosis

Gastric ulcers, acute superficial, with massive hemorrhage

Postpartum status

Atheromatous intimal degeneration, early, aorta.

STUDENTS' DIAGNOSES

Diabetes mellitus
Eclampsia
Cardiac failure
Pyelonephritis.

DR. HOWARD'S DIAGNOSES

Diabetes mellitus
Eclampsia
Brain damage
Stress ulcers of gastrointestinal tract.

1965 IMS ANNUAL MEETING

"Washington Investigations"

A Special Luncheon Address

By

CLARK R. MOLLENHOFF

Pulitzer Prize Reporter
Cowles Publications—Washington Bureau

12 O'clock Noon
Monday, April 12—Fort Des Moines Hotel

Watch For Further Details

AMA Environmental Health Congress

Environmental influences from the ultravirus to the megalopolis and the manner in which they affect man, his health and well-being will be the subject of the AMA's Second Congress on Environmental Health Problems to be held April 26-27 at The Drake in Chicago. The Congress, based on the theme "Population, Environment and Health," will explore population problems, changing environmental influences, changing disease patterns, control and prevention of disease and urban planning for healthful living. National leaders from the fields of medicine, microbiology, aerospace medicine, sociology, virology, communicable disease and urban planning will participate in this wide ranging interdisciplinary program. Some 500 representatives from medicine and allied fields are expected to attend.

"The purpose of this Congress is to broaden understanding of the interaction between man and his environment in the belief that this will help to improve medical practice and build more healthful environments."

The first panel of the Congress will be devoted to evaluating the effect of changing environments on living cells, viruses, air, water, food and physical and mental health. Reviews of effects of outer space and undersea environments will also provide insight into man's total biological limits and potentials and the extent to which this knowledge can be applied to medical practice.

The second panel will review changing disease patterns: the social, environmental and biological factors which underlie current trends in the incidence of tuberculosis and venereal and chronic respiratory diseases. "Lack of health" symptoms involved in motivating patients to seek medical care, absences from work, or which otherwise have no satisfactory explanation will be discussed in terms of their possible relationship to environmental conditions.

The third panel will consider ways of preventing disease through medical and public health practices, and environmental engineering and legislation, and will evaluate the risks and costs involved.

The final panel of the Congress will analyze the potentials of our urban planning know-how in terms of building environments which advance the possibilities of improving health and well-being. Aesthetic, social, economic and health objectives of communities will be evaluated and the functions of planning agencies, specific planning problems and the role of the medical profession will be considered.

Further information may be obtained by writing to the Department of Environmental Health, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

Coming Meetings

IN STATE

Feb. 16-19 **Refresher Course for the General Practitioner,** Medical Amphitheater, U. of I. College of Medicine, Iowa City, Iowa.

Feb. 18-19 **Sioux Valley Medical Association (70th Annual Meeting),** Sheraton-Warrior Hotel, Sioux City, Iowa.

Mar. 10-11 **Mental Health of the Older Adult,** University of Iowa Psychopathic Hospital, Iowa City.

Mar. 17 **Infertility and Endocrinology,** U. of I. College of Medicine, Iowa City.

Apr. 8-9 **Pediatric Conference,** Raymond Blank Memorial Hospital Assn., School of Nursing Auditorium, Iowa Methodist Hospital, Des Moines.

Apr. 11-14 **Iowa Medical Society Annual Meeting,** Hotel Fort Des Moines, Des Moines.

CONTINENTAL U. S.

Feb. 1-5 **Recent Advances in Diagnosis and Treatment of Diseases of the Heart and Lungs,** Hotel Fontainebleau, Miami Beach.

Feb. 4-5 **AMA Committee on Aging—Conference on Aging and Long-Term Care,** Drake Hotel, Chicago.

Feb. 5-6 **Basic Vectorcardiography,** University of Nebraska College of Medicine, Omaha.

Feb. 6 **American College of Physicians Regional Meeting for Nebraska Internists,** Omaha, Nebraska.

Feb. 6-9 **61st Annual Congress on Medical Education,** Palmer House, Chicago.

Feb. 8 **Fractures and Orthopedics,** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City, Kansas.

Feb. 9 **Medical Problems in Surgical Patients,** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City, Kansas.

Feb. 10 **Office Psychiatry,** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City, Kansas.

Feb. 11 **Endocrinology and Metabolism,** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City, Kansas.

Feb. 12 **Gastroenterology,** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City, Kansas.

Feb. 15-17 **Radiology and Radioactive Isotopes,** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City, Kansas.

Feb. 15-17 **American College of Surgeons Sectional Meeting,** Bellevue-Stratford Hotel, Philadelphia.

Feb. 15-18 **Annual Convention, Medical Society of the State of New York,** The Americana, New York City.

Feb. 15-18 **Recent Advances in Gastroenterology,** University of California Extension, El Mirador Hotel, Palm Springs.

Feb. 15-19 **American College of Physicians—Pathology, Pathologic Physiology and Clinical Aspects of Renal Disease,** Presbyterian-St. Luke's Hospital, Chicago.

Feb. 18-19 **Fourth National Symposium on Cardiovascular Diseases,** Marriott Motor Hotel, Philadelphia.

Feb. 19 **American College of Physicians Regional Meeting for Kansas Internists,** Topeka, Kansas.

Feb. 19 **American College of Physicians Regional Meeting for Internists in Pacific Northwest Area,** Health Sciences Auditorium, U. of Washington School of Medicine, Seattle.

Feb. 19-21 **American College of Physicians regional meetings of north and south California and Nevada,** El Mirador Hotel, Palm Springs.

Feb. 20 **American College of Physicians Regional Meeting for Virginia Internists,** Williamsburg, Virginia.

Feb. 22-26 **American College of Physicians—Pain and Addiction,** Harvard Medical School, Boston.

Feb. 25-26 **Neurology and Psychiatry,** University of Nebraska College of Medicine, Omaha.

Feb. 26-28 **Early Management of Acute Trauma,** University of California Extension, Neuropsychiatric Auditorium, UCLA, Los Angeles.

Mar. 1-5 **American College of Physicians, Molecular Biology and Clinical Medicine,** Philadelphia General Hospital, Philadelphia.

Mar. 3-5 **Management of Trauma,** University of Colorado School of Medicine, Denver.

Mar. 5-11 **1965 Loma Linda University School of Medicine Alumni Postgraduate Convention,** Ambassador Hotel, Los Angeles.

Mar. 7 **American College of Gastroenterology Southern Regional Meeting,** Roosevelt Hotel, New Orleans.

Mar. 8 **Closed Chest Cardiac Resuscitation,** University of Nebraska College of Medicine, Omaha.

Mar. 8-10 **Pediatrics,** University of Kansas Medical Center, Battenfeld Auditorium, Kansas City, Kansas.

Mar. 8-11 **Annual Sectional Meeting for Doctors and Graduate Nurses,** American College of Surgeons, Olympia Hotel, Seattle.

Mar. 8-12 **American College of Physicians—Recent Advances in Cardiovascular Disease,** Mt. Sinai Hospital, New York City.

Mar. 11-13 **1965 National Medicolegal Symposium,** Dunes Hotel, Las Vegas.

Mar. 15-17 **Clinical Reviews, Mayo Clinic and Mayo Foundation,** Mayo Civic Auditorium, Rochester, Minn.

Mar. 15-19 **Medical Technology,** University of Colorado School of Medicine, Denver.

Mar. 15-19 **American College of Physicians—Cardiology,** Emory University School of Medicine, Atlanta, Georgia.

Mar. 17-20 **Arizona Cancer Seminar,** Pioneer Hotel, Tucson, Ariz.

Mar. 22-24 **Clinical Reviews, Mayo Clinic and Mayo Foundation,** Mayo Civic Auditorium, Rochester, Minn.

Mar. 22-25 **Surgery,** University of Kansas Medical Center, Battenfeld Auditorium, Kansas City, Kansas.

Mar. 22-26 **Golden Anniversary Session of the American College of Physicians,** Conrad Hilton Hotel, Chicago.

Mar. 25-27 **Mid-Central States Orthopaedic Society,** Valda Rose Motel, Hot Springs.

Mar. 26-27 **18th National Conference on Rural Health,** Americana Hotel, Miami Beach.

Mar. 29-Apr. 10 **Postgraduate Course—Laryngology and Bronchoesophagology,** University of Illinois College of Medicine Medical Center, Chicago.

Mar. 31-Apr. 2 **Symposium on Gastroenterology,** Medical College of Georgia, Augusta, Georgia.

ABROAD

Feb. 5-6 **American College of Physicians Regional Meeting for Internal Medicine Specialists in Prairie Provinces of Canada,** Banff, Alberta.

Feb. 24 **American College of Physicians Regional Meeting for Hawaii Internists,** U. S. Army Tripler General Hospital, Honolulu.

Feb. 26 **International Seminar on Legal Medicine,** Pittsburgh Institute of Legal Medicine, University of Rome, and Cavalieri Hilton Hotel, Rome, Italy.

May 24-26 **Current Concepts in Gastroenterology—American College of Physicians,** Royal Victoria Hospital, Montreal, Quebec.

Editorials

A FISH STORY THAT IS NO FISH STORY

It is just possible, Doctor, that on occasion you become discouraged in your efforts to serve your fellow members of the species homo sapiens. Perhaps, in moments of despair, it may ameliorate your downheartedness to reflect upon the fact that your problems could be worse. What if it were your lot to care for a different species of mammal, the Balaenoptera musculus?

Balaenoptera musculus is the scientific name assigned by Linnaeus to the largest and heaviest creature that ever lived, the blue whale. The whale is a re-entrant into the sea, and has made a remarkable adaptation to an environment foreign to a mammal. The mature blue whale attains a length of slightly more than 100 feet and a weight of nearly 150 tons. It is said that in bulk it is equal to three of the largest dinosaurs or 30 large elephants. The heart of the adult blue whale weighs 1,000 pounds, the liver over a ton, the brain weighs a relatively light 20 pounds. The blubber of the blue whale yields an average of 40,000 pounds of oil. Despite its size and weight, it is reputed to attain speeds of 16 to 18 knots for short distances.

The blue whales of the southern hemisphere spend the warm months of October to April in Antarctic waters. It is there that these huge creatures consume tremendous quantities of food and acquire a thick layer of blubber which insulates them from the frigid waters of the polar sea. They feed almost exclusively on *krill,* a shrimp-like crustacean two to three inches in length. It is said that a medium-sized blue whale eats approximately four tons of krill a day in eight meals of about a half-ton each.

These unusual animals are called "baleen" whales because they have no teeth. They possess a mesh of whalebone which hangs from the upper gum, and which strains krill and plankton from the sea. When feeding, their enormous mouths are opened wide, their tongues are depressed and their throats are expanded. Large amounts of water and food are engulfed, and then the mouth is closed, the throat contracted, and the tongue is pushed upwards. This action expels the water, and the food retained by the whalebone mesh is then swallowed through a relatively small esophagus.

Marine animals have high metabolic rates—greater, pound for pound, in terms of oxygen consumption or food intake than those of land animals. The consumption of huge quantities of food which is rich in protein and fat fulfills this large metabolic requirement. Fats are stored as blubber which provides insulation and a rich source of fuel to furnish energy. In the oxidation of fats, there is a generous yield of water which is a necessity for animals living in a salty sea.

When winter returns to southern waters, the herds of blue whale migrate north to more temperate waters. It is here that the calves are born after a gestation period of 10 to 11 months. The foetus grows at a rate of almost 16 pounds per day, and at birth the baby whale is about 24 feet long and weighs 2½ tons. The accouchement of such an infant would be something with which to regale one's confreres in doctors'-room conferences for years to come.

The blue whale calf is weaned at about seven months of age, when it has attained a length of 52 feet and a weight of 22 to 23 tons. The animal's growth to that point represents a gain of 20 tons, or an average of almost 200 pounds per day, though the greatest gain has been made in the late months of nursing. It is estimated that the larger calves consume 130 gallons, or 1,000 pounds of breast milk per day, divided into a number of nursing periods. An amazing provision of nature is that breast milk is pumped into the calf by contractions of the mother's breast. To meet the metabolic needs and to provide for a rapid laying down of a thick layer of blubber, the breast milk is highly concentrated. Less than one-half the milk is water, and it is composed of 40 to 50 per cent fat, 11 to 12 per cent protein, and only 1 per cent lactose. These contrast sharply with the ingredients of human milk, which is 87 per cent water, 1 per cent protein, 3.8 per cent fat, and 7 per cent lactose.

If all this is true about the lactating female of the species balaenoptera musculus—and the biologists assure us that it is true—it is a whale of a story with which to impress those of your patients who are mothers, species homo sapiens!

ANTICOAGULANTS FOR ELDERLY ACCIDENT PATIENTS?

An analysis of 950 fatal injuries which occurred in Philadelphia during the year 1961 has produced some interesting and rather surprising findings.* Autopsies were performed in 72 per cent of the cases, so that accurate anatomic diagnoses were possible in the majority of patients.

The series of 950 traumatic fatalities consisted of 595 males and 355 females. Seventy-two per cent of the patients were whites. Many of the injured were older people—34 per cent 70 years of age or older, and 50 per cent over 60 years of age. The mean age of the 950 patients was 65 years. Surpris-

* Fitts, W. T., Jr., Lehr, H. B., Bitner, R. L., and Spelman, J. W.: Analysis of 950 fatal injuries. SURGERY, 56:663-668, (Oct) 1964.

ingly only 13 per cent of the fatal injuries occurred in patients under 20 years of age.

The vast majority of patients (97 per cent) were injured while away from work. More than one half were either at home or ill in a nursing home or hospital at the time of the accident. This figure reflected the large number of elderly persons in the series. Only three per cent were at work, 15 per cent were in transit, and 16 per cent were in a public place at the time of the injury.

As in most other reported series of fatal accidents, falls were by far the commonest cause of injury. In this group of 950 fatal injuries, falls were the cause of the injury in 40 per cent of the cases, suicide was the occasion for injury in 19 per cent, motor vehicle injuries were responsible in 15 per cent, 11 per cent were due to homicide, 6 per cent resulted from burns, and miscellaneous injuries caused death in 9 per cent.

Fracture of the hip was the most common primary injury sustained in the 950 fatal accidents. Two hundred forty-seven patients (26 per cent) were admitted to the hospital with this injury. There were 71 other fractures that constituted only 7 per cent of the total injuries. Intracranial injuries occurred in 209 patients (22 per cent); multiple severe injuries in 196 (20 per cent); asphyxia in 93 (10 per cent); burns in 64 (7 per cent); and miscellaneous injuries resulted in death in 8 per cent of the group.

One of the most interesting aspects of the study was the analysis of the cause of death after fracture of the hip. In 86 patients who died following this injury and on whom no autopsies were performed, two of the deaths were ascribed to pulmonary embolism; 69 to cardiovascular complications; 14 to pneumonia; and 1 to a cause classified as miscellaneous. Autopsies were performed in 161 of the cases, and of those patients thus definitively diagnosed, it was found that 61 (38 per cent) had died as a result of a pulmonary embolism; 51 (27 per cent) as the result of cardiovascular and renal complications; and 5 from miscellaneous causes.

The authors point out the importance of a complete autopsy if the precise cause of death is to be determined following death from injury. When autopsies were performed on 161 of the 247 patients dying after fractures of the hip, a pulmonary embolus was found to have been the cause in 38 per cent. In patients not autopsied, death was attributed to pulmonary embolus in only 2 per cent. Because patients with a broken hip often die suddenly, death is frequently ascribed to a complicating cardiovascular disease such as an acute myocardial infarction, though it is highly probable that many of these patients actually died as a result of a sudden, massive pulmonary embolus.

Because of the large number of patients dying from fatal pulmonary emboli following traumatic injuries, the authors raise the question whether prophylatic anticoagulant therapy might be a lifesaving measure. It is within the realm of possibility that the use of anticoagulants might have reduced the mortality of patients in this series who suffered a fractured hip.

In analyzing the records of the 950 patients with fatal injuries, Fitts et al. found that in 51 instances there may have been one or more errors in patient care. In the judgment of the authors, there were errors in the diagnoses in 11 instances; errors in management in 34 patients; and errors in both diagnosis and management in 6 of the patients. Since these 950 patients were cared for in 41 different hospitals in the Philadelphia metropolitan area, it is not surprising that there was some variation in the quality of medical care.

In their summation, the authors state that a combination of unusual circumstances permitted an unusually complete analysis of 950 fatal injuries in Philadelphia. From this study they concluded:

1. The most common cause of death from injury was a fall at home by an aged patient. The most common fatal injury was a broken hip.

2. Complete autopsy in cases of death from injury may reveal unsuspected causes of death. For example, autopsy diagnoses in deaths after fractures of the hip contrasted markedly with the recorded causes of death when no autopsies were done.

3. Though many of the deaths could not have been prevented, there were 51 instances in which errors may have contributed to the fatal outcome.

ANTIBIOTICS CAN HINDER MORE THAN HELP

A study of patients with subphrenic abscess cared for on the Loma Linda University surgical service of the Los Angeles General Hospital over a 20-year period, 1944 to 1964, yielded the remarkable finding that despite the liberal use of antibiotics, the incidence of mortality from this condition has not been appreciably reduced.* On the contrary, it was deduced that antibiotics may obscure the clinical picture and thus be responsible for an increasing number of subacute and chronic cases of this formidable condition.

The study included 125 cases of subphrenic abscess. There were two and one-half times as many males as females in the group. The ages ranged from 5 to 90 years, but young adults and middle-aged people made up 85 per cent of the cases. In 71 per cent, the abscess was on the right side; in 23.2 per cent, it was on the left; and in 5.8 per cent, the abscesses were bilateral. Surgical drainage of the abscess was done in 70 patients, and in 55 patients no operation was performed. An abscess involving a single subdiaphragmatic space was present in three-fourths of the patients, and

* Carter, R., and Brewer, L. A., III: Subphrenic abscess: thoracoabdominal complex: changing picture with antibiotics. AM. JOUR. SURG., **108**:165-175, (Aug.) 1964.

Editorials continued...

multiple space abscesses were found in the remainder.

Subdiaphragmatic abscess developed as a complication of an abdominal disease in over 98 per cent of the series, and in only 1.6 per cent was it the result of a primary, or embolic infection. There were no abscesses resulting from an empyema's penetrating the diaphragm. The largest number of abscesses followed perforations of the gastrointestinal tract or operations on the stomach or duodenum, making up 38 per cent of the cases. In 20 per cent, the abscesses were complications of liver or biliary tract disease. Trauma was considered the etiologic factor in 18 per cent, and appendiceal disease in 12 per cent. When these were compared with a large series reported in the preantibiotic era, an increase was noted in the proportion of cases which followed elective abdominal surgery or trauma. There had been a marked reduction, however, in the number of cases following appendiceal disease in the present series.

Earlier studies usually reported a single infecting organism in a subphrenic abscess. An interesting finding was that more recently, during the antibiotic era, more than one organism has been usually found on culture. E. coli, streptococci and staphylococci were the most common bacteria found. Staphylococcal infestations have almost doubled in frequency since the advent of antibiotics, and most of them are resistant. There has also been a marked rise in the frequency of gram-negative organisms in cultures of subphrenic abscesses, and common antibiotic therapy is often ineffectual in the treatment of infections due to these highly resistant organisms.

The authors point out that there is considerable confusion about the anatomy of the subphrenic space, and that, strictly speaking, many so-called subphrenic abscesses have no contact with the diaphragm. The liver transects the right subphrenic region into two spaces, the anterior or suprahepatic, and the sub- or infrahepatic spaces, and they are separated by the falciform, the coronary and the triangular ligaments. On the left side there is one suprahepatic space and two subhepatic spaces—one anteriorly in the perigastric space and the other posteriorly in the lesser omental sac.

It is emphasized that the diagnosis of subphrenic abscess is not difficult if one recognizes that it is a thoracoabdominal clinical complex. In the present series, chest findings predominated in 44 per cent, and abdominal findings were more prominent in 42 per cent of the cases. In somewhat less than 14 per cent, there are only minor thoracic or abdominal findings. In this last group, it was thought that the use of antibiotics had obscured the clinical picture or that terminal septic shock dominated the picture.

The authors assert that one can better understand the thoracoabdominal symptom complex if he is familiar with the lymphatic drainage from the various sites within the abdomen. It is by lymphatic spread that infection reaches the subphrenic space, passes through the diaphragm, along the intrathoracic lymphatics to the thoracic duct and finally into the blood stream.

X-ray was very helpful in the diagnosis of subphrenic abscess in this series of cases, but it was pointed out that special technics are necessary, and repeated x-ray studies should be made as the clinical picture changes.

Seventy patients in this series were operated upon, and there were 22 deaths (31.4 per cent). In 1938, in a series collected from the world literature, Ochsner and De Bakey reported a surgical mortality of 32.8 per cent. In the present series, 55 patients were not operated upon, and 37 of them died, for a mortality of 67 per cent. In the preantibiotic era, Ochsner and De Bakey had reported a mortality of 89.8 per cent in non-operated patients.

The authors reported upon two important complications which had not received much attention in the reports of other surgeons. Thirty-six patients with subphrenic abscesses of long duration showed a marked loss in weight. Of the 125 patients, 36 had lost 20 or more pounds, and most of these were erroneously thought to have a gastrointestinal malignancy. The marked loss of weight occurred mostly in the older age group, and the mortality in this group of cachectic patients was 66 per cent. Sepsis was an extremely serious outcome of subphrenic abscess. Of 29 patients with positive blood cultures, 27 died. It is pointed out that the administration of antibiotics without surgical drainage of a subphrenic abscess is almost useless, and it is imperative that a correct diagnosis be made before the patient becomes cachectic or before sepsis overwhelms the body defenses.

In commenting upon their experience, the Los Angeles surgeons acknowledged that the diagnosis of subphrenic abscess can at times be extremely difficult. By keeping in mind the concept of a thoracoabdominal complex, one can identify an otherwise obscure clinical picture as the result of a subphrenic abscess. Because of the time element as a subphrenic cellulitis develops into an abscess, there is a need for repeated x-ray examinations if earlier ones haven't been diagnostic. There are occasions when it is wise to stop using antibiotics for it is possible that they may be masking though not preventing the development of a subphrenic abscess. After a short time the clinical picture becomes clarified, or x-ray signs of a subphrenic abscess become evident. One can then provide adequate drainage, can order culture and sensitivity studies, and can initiate proper antibiotic therapy.

From their experience with the series of 125

cases of subphrenic abscess, the authors arrived at the following conclusions:

1. The diagnosis of a subphrenic abscess is not particularly difficult if one keeps in mind the concept of a thoracoabdominal clinical complex.

2. The liberal use of antibiotics has not appreciably reduced the incidence of or the mortality from subphrenic abscess.

3. Antibiotics can obscure the clinical picture and increase the number of subacute or chronic subphrenic abscesses.

4. Repeated x-ray examinations are helpful in confirming clinical impressions and in establishing diagnoses for patients in whom the clinical picture of subphrenic abscess is not clear.

5. Bacterial studies indicate that coagulase-positive Staphylococcus aureus is found about twice as often as it was in a series that was reported before the advent of antibiotics. There have also been increases in infections due to gram-negative organisms and to multiple infecting organisms.

6. In contrast to previous studies, this series showed that there has been an increase in subphrenic abscesses following trauma and after elective abdominal operations.

7. Extra-serous drainage is the procedure of choice for all types of subphrenic abscess except those of the lesser omental space and except for certain difficult upper-abdominal problems in which a transperitoneal approach is necessary.

8. The mortality of operated cases in this series was no better than that in a similar series in the pre-antibiotic era. In the patients in whom the subphrenic abscess was not drained, the mortality was twice that of patients treated by surgical drainage, despite the use of antibiotics.

THYROTOXICOSIS IN CHILDHOOD

There has been considerable disagreement concerning the proper management of thyrotoxicosis in childhood. Certain clinicians have insisted that young patients should be treated surgically, and others have contended that medical treatment is preferable. Though radioactive iodine is considered the treatment of choice in many adult patients with hyperthyroidism, this form of treatment has been considered too hazardous for use in the young. A recent report of a 20-year experience by Nathan Talbot and associates, from the Harvard Medical School and the Massachusetts General Hospital, on the subject of thyrotoxicosis as observed in the Children's Endocrine and Metabolism Clinic is a valuable addition to the literature on this perplexing disorder.*

According to the Harvard group, children constitute only about 5 per cent of the patients with thyrotoxicosis. In the Children's Endocrine and Metabolism Clinic, however, it has been one of the most common of thyroid disorders observed, constituting 45 per cent of all goiters. The report concerns the 70 children with hyperthyroidism seen during a 20-year period, 1941-1961. The long period of follow-up has provided an unusual opportunity to evaluate the results of management.

Of the 70 patients cared for in the 20-year period, 55 (79 per cent) were female. The onset of hyperthyroidism was most commonly in early adolescence. In nine patients the onset had occurred at no more than five years of age; in 19 the onset was between 6 and 10 years; in 29 patients the onset was between 10 and 13 years; and in 42 patients the onset occurred between the ages of 11 and 16 years. In approximately one-third of the patients, the onset of symptoms began shortly after either physical or mental trauma, arousing a suspicion that the stress was a factor in precipitating the condition.

The onset was usually insidious, and in many patients advanced disease was present before they received medical attention. Mild symptoms were usually present for four to six months before they were recognized as manifestations of disease. In eight of the 70 patients, the onset was more acute. It was surprising that clinical symptoms such as nervousness or tremor were disregarded as indications of disease. A higher index of suspicion is necessary if delay in the recognition of the disease and errors in diagnosis are to be avoided.

According to the authors some of the earliest symptoms were nervousness, restlessness, and deterioration in the quality of school work. Difficulty at home and at school occurred as a result of extreme emotional disturbances such as irritability, lack of concentration, and spells of crying. Frequent abnormal muscular movements, restlessness, enlargement of the thyroid, and eye signs usually followed, more or less in that order.

By the time the patient came to the Clinic, the thyroid was usually three or four times normal size. The gland was usually diffusely enlarged, and it was soft and smooth. A thrill and bruit were usually present, particularly over the upper lobes. There was no close correlation between the degree of thyroid enlargement and the severity of symptoms.

Exophthalmus was present in 77 per cent of the patients, and it was usually bilateral. However, the degrees of proptosis of the two eyes frequently varied. The severity of this symptom had no direct relation to the severity of other symptoms, to the size of the thyroid, or to the level of the protein-bound iodine. A peculiar "stare" was one of the most common features observed in this group of children. The stare promptly disappeared with control of the hyperthyroidism, but the exophthalmus took a much longer time to resolve.

Tachycardia and an elevated systolic blood pressure with a wide pulse pressure were very frequent findings. Mild to moderate cardiac enlargement and a precordial systolic murmur were not

* Saxena, K. M., Crawford, J. D. and Talbot, N. B.: Childhood thyrotoxicosis: long-term perspective. BRITISH M. J., 2:1153-1158, (Nov. 7) 1964.

Editorials continued...

uncommon. Cardiac decompensation was present in six patients in the group.

Nervous symptoms were among the earliest manifestations of the disease. Frequent abnormal muscular movements were so severe in some children that it was suggestive of chorea. Tremor of the outstretched hands and of the tongue were present in 52 of the 70 patients. Muscle weakness was a very common observation.

In most instances laboratory tests were not needed in establishing a diagnosis. However, they were important in following the course of the disease and the response to therapy. The basal metabolic rate has been almost completely abandoned, at the Clinic, in favor of more reliable tests. Serum protein-bound iodine (PBI) was found to be one of the most reliable diagnostic criteria, and it was elevated in every child with thyrotoxicosis. The serum butanol-extractable iodine (BEI) is also elevated in these children, and is particularly valuable in that it is normal in children with lymphocytic thyroiditis and other non-toxic goiters in which the PBI is usually elevated.

In this group of 70 patients, 52 underwent subtotal thyroidectomy. Of the 18 patients not operated upon, iodides were administered in the earlier years and antithyroid drugs more recently. This group was considered too small and the follow-up period too short to justify any broad conclusions. Attention to preoperative management assured a smooth postoperative course. This consisted of adequate rest, diet and sedation. Propylthiouracil was given for six to eight weeks before the operation, and potassium iodide was given for 10 days before surgery. Subtotal thyroidectomy was carried out, leaving approximately 1 Gm. of thyroid tissue.

Following the operation, U.S.P. thyroid was administered in a dose of 100 to 120 mg. per square meter per day for one year. At the end of the year, the drug was discontinued for approximately two months, and the thyroid status was evaluated clinically and by a PBI determination. The children who were euthyroid at that time were given no further treatment, but they were followed in the Clinic.

Of the 52 children operated upon, 30 (58 per cent) had become hypothyroid when replacement therapy was discontinued at the end of a year. Thyroid administration was resumed in these patients and their status was evaluated at about yearly intervals. At the time of the final follow-up, 12 had become euthyroid and 18 (35 per cent) were permanently hypothyroid.

In the immediate postoperative period, nine (17 per cent) of the children developed tetany. They were treated by intravenous calcium gluconate and oral calcium lactate and vitamin D. Five patients developed permanent hypoparathyroidism, necessitating continuous treatments with calcium and vitamin D.

There was one death in the group of 52 patients operated upon. This patient was a girl with rheumatic heart disease. Though she was treated with antithyroid drugs, there was no response, and she was operated upon because of increasing cardiac difficulties. Cardiac arrest occurred on the second postoperative day.

No patient developed recurrent laryngeal-nerve paralysis and none developed an acute thyroid crisis after surgery. Two children developed keloid formation, but both recovered without any specific treatment.

According to the authors, there was a uniformly good response to the operation in that there was a remission of hyperthyroidism in all patients. Recently in an attempt to reduce the high incidence of postoperative hypothyroidism, approximately 4 to 5 Gm. of thyroid tissue was left instead of the usual 1 to 1.5 Gm. Three patients so treated suffered relapses of thyrotoxicosis within two years following surgery. Aside from these three cases, there were no other instances of postoperative recurrence.

A long period of follow-up study provided an unusual opportunity for determining the outcome of the surgically-treated patients. Thirty patients were followed for five to over 15 years; 13 were under observation for two to five years; four for one to two years, and only five for less than one year. At the time of the final evaluation, 25 patients (48 per cent) were euthyroid; 18 (35 per cent) were hypothyroid; three had a recurrence of thyrotoxicosis; and in six patients the follow-up was considered inadequate. Many of the children were hypothyroid for one to five years before becoming euthyroid—in contrast to the experience with radioactive iodine therapy, in which there is a reported increase in the incidence of hypothyroidism of about 3 per cent per year. There appeared to be some correlation between the development of hypothyroidism and the degree of lymphocytic infiltration of the thyroid.

The authors point out that the treatment of juvenile thyrotoxicosis continues to be controversial. In assessing the merits of therapy one must consider several factors: the degree of success, the fate of the goiter, the incidence of relapses and of complications, the length of treatment, the cost, and the cooperation of the patient and the family. In reviewing the reported results of medical therapy, the authors state that approximately 50 per cent of patients with juvenile thyrotoxicosis can be expected to do reasonably well on medical therapy. For best results, about three years of treatment are required, and relapses and toxic reactions to the drugs are frequent. Approximately one-fourth of medically treated patients ultimately require surgery.

The Boston group assert that despite its shortcomings—particularly the development of hypo-

thyroidism and tetany—surgery still has an important place in the treatment of thyrotoxicosis in childhood. The removal of sufficient thyroid tissue can abolish recurrences consistently and predictably. In view of the high rate of failure and of recurrence under medical therapy, subtotal thyroidectomy may be preferable despite the risk of postoperative hypothyroidism.

The acknowledged fact that surgery is not the ideal treatment for juvenile thyrotoxicosis impels a search for better methods. Radioactive iodine therapy, which has proved so successful in adults, should be explored cautiously in the younger age group.

The Harvard physicians briefly report the results of radioiodine treatment of a group of 26 patients, all girls, under 20 years of age. None of the patients were in the group of 70 included in the 20 year study. Of the 26 girls, 12 were between 15 and 20 years of age at the time of I^{131} therapy; 11 were between 10 and 15 years; and three were between five and 10 years of age. The dose of I^{131} employed was approximately 100 microcuries per estimated gram of thyroid tissue. The period of follow-up was less than three years in 15 patients; three to five years in three; five to 10 years in five; and over 10 years in three of the group. As a result of radioiodine therapy, there was good control of the thyrotoxicosis in 20 of the 26 patients; poor results in two; and recurrences in four. There was no demonstrable disturbance of physical or sexual maturation of these girls as a result of therapy, and five of them subsequently gave birth to normal children. One patient developed a recurrence of thyrotoxicosis 18 years after treatment. At operation adenomatous changes were found, but there was no evidence of malignancy.

The advantages of radioiodine therapy are simplicity, efficacy, short duration of treatment, and low cost. There has been great reluctance to employ it in children because of the reported development of thyroid nodules. However, the authors assert that this in itself should not justify its rejection. Similar nodules may occasionally develop after subtotal thyroidectomy. In the present series of 52 surgically treated patients, 10 per cent showed nodular changes on histologic examination. It is estimated that approximately 10 per cent of the general population will eventually develop nodular goiters, and only about 1 per cent will develop carcinoma of the thyroid.

Genetic damage is an additional hazard of radioiodine treatment, and although there is no unequivocal evidence of such injury, the possibility cannot be disregarded. In contemplating this possibility, the authors assert, one must consider the seriousness of the disease, and the high incidence of side-effects which occur with the other methods of treatment now available. Though not advocating the general use of radioiodine, they think it worthy of future trials in selected patients under very careful medical supervision.

As a result of their 20-year experience in the management of thyrotoxicosis in childhood, the authors state that a lack of understanding as regards its etiology has prevented the development of a cure. Surgical treatment has produced good control, though hypothyroidism and tetany have been frequent complications. In their experience, the medical treatment has been even less satisfactory, and ultimately one-fourth of such patients have required surgical treatment. Though radioiodine has proved eminently successful in the treatment of adults, the question of whether it is useful in the treatment of children remains unanswered. From their experience, Talbot and his group state that further use of the method is justified if it is done under careful qualified medical supervision and long-term follow-up.

U. of I. Conference on Infertility and Endocrinology

The Department of Obstetrics and Gynecology at the University of Iowa will present a Postgraduate Conference on Infertility and Endocrinology in Iowa City on March 17, 1965. The registration fee of $10 will include the cost of a lunch ticket. This program is acceptable for seven hours of credit by the American Academy of General Practice.

Two outstanding guest lecturers will address the conference. Samuel Jan Behrman, M.D., the editor of the INTERNATIONAL JOURNAL OF INFERTILITY, is a South African who completed his undergraduate medical training at the University of Capetown in 1944, and received residency and postgraduate training at Belfast and London. He is a professor of obstetrics and gynecology at the University of Michigan, and is a co-author of the textbook FUNDAMENTALS OF GYNECOLOGY.

Michael Edward Yannone, M.D., is an assistant professor of obstetrics and gynecology at the University of California, San Francisco. He took his undergraduate medical training at the University of Pennsylvania (M.D., 1955), served as a resident at the University of Michigan and Ohio State University, and for two years was an NIH research fellow (steroid chemistry) at California.

9:15 a.m. "Ovogenesis—Known Facts"—J. T. Bradbury, Sc.D.
10:00 a.m. "Anovulation"—S. J. Behrman, M.D.
10:30 a.m. "Induction of Ovulation"—Dr. Yannone
11:00 a.m. "Immunologic Aspects of Infertility"—Dr. Behrman
11:45 a.m. QUESTIONS AND ANSWERS

SYMPOSIUM ON THE MENOPAUSE

1:30 p.m. "Endocrinology and Treatment"—Dr. Yannone
2:15 p.m. "Premature Ovarian Failure"—W. C. Keettel, M.D.
3:00 p.m. "Psychologic Reactions"—M. C. Pepernik, M.D.
3:45 p.m. INTERESTING CASES

President's Page

The word *freedom* is so ambiguous that both liberals and conservatives use it in discourse, and reach entirely different conclusions. In World War II the Four Freedoms supposedly symbolized the essence of freedom. Yet, careful analysis of freedom from want, from fear, of worship and of speech reveals that one could enjoy all of these so-called freedoms and still not be free.

Freedom is something more than passive security or permissive concession. Freedom permits energy and purpose. It is not an end in itself, but is a means or a mechanism for attaining, achieving and creating.

The exercise of freedom involves *choice* as its most exacting discipline. The right to choose is, of course, the right to err. Furthermore, if one is free to act, he is responsible not only for his acts but for the consequences of those acts.

It is the element of choice, with its consequences and its responsibilities, that encourages the timorous to reject freedom in favor of security. *Freedom may be lost as readily by rejection or abandonment as by willful destruction.*

Otis D Wolfe

President

THE JOURNAL *Book Shelf*

BOOK REVIEWS

Handbook of Obstetrics and Gynecology, by *Ralph C. Benson,* M.D. (Los Altos, Calif., Lange Medical Publications, 1964. $5.00).

This pocket-sized handbook is a veritable library compressed into one small volume.

The author vividly and succinctly describes the anatomy and physiology of the female genital tract, as well as the phenomena of pregnancy.

The management of a normal pregnancy and of the majority of complications is then outlined in a most lucid manner.

The section on gynecology covers all major and minor gynecologic diseases. The chapter on psychosomatic gynecology is a masterpiece, and is one that should be read by every physician caring for women.

Although there will be an occasional statement or conclusion in this book that one cannot fully agree with, it can be recommended without reservation, particularly to the busy obstetrician-gynecologist or also to the generalist who is seeing a large number of women patients.—*C. W. Seibert,* M.D.

Blood Program in World War II, by the Medical Department, United States Army. (Washington, D. C., U. S. Government Printing Office, 1964. $8.00).

This large volume gives a complete history of the development of the whole blood program during World War II (a supplement relates experience during the Korean War), and is of particular interest to Iowans because of the great part played in it by a team from University of Iowa Hospitals, composed of Drs. Robert C. Hardin, Elmer L. DeGowin and Everett D. Plass.

The book begins with a good history of the blood programs in World War I, the Spanish Civil War, and the early stages of World War II (the Blood for Britain program). These preliminaries gave our country a great boost in developing its plasma program. It was soon apparent that whole blood was a necessity, but the idea was slow in gaining acceptance. Drs. Hardin and DeGowin firmly backed the concept that shock and hemorrhage constituted an acute condition for which whole blood must be administered at the earliest possible moment.

When active combat began in the European theatre, the Army Medical Corps already had had experience with blood problems in North Africa, Sicily and Italy, but this book says, "The amount of whole blood that would be needed on the Continent was understimated." The need for whole blood was realized, and plasma was generally used only according to its capabilities.

This volume is an excellent source of information for physicians who are concerned with blood banks, blood-procurement and storage, blood transportation or other aspects of blood programs.—*C. Harlan Johnston,* M.D.

The Liver and Portal Hypertension (Vol. No. 1, in the Series of Major Problems in Clinical Surgery) by *C. G. Child, III,* M.D. (Philadelphia, W. B. Saunders Co., 1964. $8.50).

This small book, the first in a projected series, is "intended to bring to the practicing surgeon an up-to-the-minute report of the basic concepts and technical approaches to important and controversial surgical diseases and injuries." This first volume has been written by several authors, mostly from the University of Michigan. The large type is easy to read, and there are many pictures, drawings and graphs to aid the reader on his way. The primary topic is surgical, but the surgeon is aided by succinct comments about basic anatomy, pathology and medical treatment as well.

Would we could have more books like this one. The large type makes for easy reading, and there is even some literary style! It doesn't read at all like an encyclopedia! Furthermore each topic is dealt with briefly, but the principal topics are covered with definiteness. The reviewer agrees with Dr. Child in his discussion of shunting procedures. There will be some who do not. Yet, one knows where the writer stands and his reasons for his convictions. This short book, therefore, gives us the why's and wherefore's and methods of dealing with the cirrhotic, and is directed toward outstanding doctors in medical centers who are capable of dealing with the intricate problems of the liver cripple. It is an excellent beginning for the series.—*Daniel A. Glomset,* M.D.

Progress in Neurology and Pschiatry, Vol. XIX, ed. by *E. A. Spiegel, M.D.* (New York, Grune & Stratton, 1964. $14.75).

The publication date of this volume is November 2, 1964, and it is number 19 in a series which has come to represent a rather important source of material for any neurologist or psychiatrist engaged in research of a clinical or basic type. Written by such collaborators as Benjamin Boshes and Robert W. Molsby, it contains concise and very helpful reviews of recent literature, and provides helpful direction for any individ-

ual who requires assistance in research, writing or teaching.

I was amused to note that the author of the summary of current articles on "pharmacology of the central nervous system," which occupies 39 pages, makes the comment, "The number of review articles has steadily increased until it is necessary to have reviews of reviews." Thus, in commenting upon his presentation, I would have to write a review of a review of reviews.

Such volumes as these, however, appear to be the only way in which physicians can be kept more or less in touch with progress in the various aspects of neurology and psychiatry, which range from neuroanatomy to current information with respect to shock therapy.—*Howard V. Turner,* M.D.

PREVENTIVE MEDICINE IN WORLD WAR II, VOL. VII, COMMUNICABLE DISEASES, by the Medical Department of the U. S. Army. (Washington, D. C., U. S. Printing Office, 1964. $4.25).

This volume covers the following diseases: encephalitis, bartonellosis, dengue, filariasis, leishmaniasis, plague, relapsing fever, sandfly fever, typhus fevers, scrub typhus, Rocky Mountain spotted fever, and yellow fever.

The most prevalent of all the above diseases and the one that caused incapacitation of large numbers of men was dengue. The majority of cases occurred in the southwest, central and south Pacific in 1942, 1943 and 1944, between April and October. In 1945 its prevalence lessened materially when control measures became fully effective against the mosquito vector. In 1942-1945 there was a total of 80,000 cases in the areas mentioned above, out of a total of 90,000 for the whole Army worldwide. Considerable space is given to studies of the virus and to control measures. There were no deaths.

Typhus Fevers. The Epidemic type was effectively controlled with vaccine and insecticides. Scrub typhus from 1942 through 1945 caused 5,441 infections and 283 deaths. It was the most serious of the rickettsial diseases that affected U. S. Army personnel. Of murine typhus, for which there was no vaccine, there were 787 cases with 15 deaths. Incidence and control measures in each area of the world have been covered very completely.

Sandfly Fever. This is caused by a virus carried by sandflies of the genus Phlebotemus. After the infecting bite, the incubation period was 3-6 days and incapacity was 1 to 2 weeks. There were no deaths. Most of the cases were in the Old World between latitudes 20° and 45° north. There is no specific test for the disease, and diagnosis was difficult under field conditions. It was frequently confused with malaria. The invasion of North Africa took place after the sandfly season, so there were few cases. The next year, however, the invasion of Sicily turned up 14,492 cases. In 1944 there was an outbreak in the area around Naples. This emphasized the immunity developed by local populations, for many of the local folk were not even aware that the sandflies were present. Prevention consisted principally of spraying DDT of the residual type and using fine-mesh netting.

No one in the U. S. Forces contracted plague during WW II, but in Egypt there were 12 cases in 1941 in Port Said, and 9 cases in 1942. In Suez, by November, 1943, there had been 397 cases with 290 deaths. U. S. Army personnel were inoculated and the areas placed out of bounds, and no cases appeared in our Forces.

This is an excellent volume, well written and well arranged and covering well all the topics named above. —*C. Harlan Johnston,* M.D.

BOOKS RECEIVED

PSYCHOSOMATIC NEUROLOGY, by *Harry A. Teitelbaum,* M.D., Ph.D. (New York, Grune & Stratton, 1964. $13.75).

THE HISTORY OF SURGICAL ANESTHESIA, by *Thomas E. Keys,* A.B., M.A. (New York, Dover Publications, Inc., 1964. $2.00).

CONTROL OF GLYCOGEN METABOLISM—CIBA FOUNDATION SYMPOSIUM, edited by *W. J. Whelan,* Ph.D., D.Sc., F.R.I.C., and *Margaret P. Cameron,* M.A. (Boston, Little Brown and Co., 1964. $12.50).

Ninth Postgraduate Course in Trauma

The Ninth Postgraduate Course in Trauma sponsored by the Chicago Committee on Trauma of the American College of Surgeons will be held April 28, 29, 30, and May 1, 1965, at the John B. Murphy Memorial Auditorium, 50 East Erie Street, Chicago.

This year's course will feature injuries of the head, face, chest, abdomen and genito-urinary tract, peripheral nerve injuries, shock, post-traumatic renal failure, soft-tissue injuries, aseptic necrosis, pathological fractures and many other types of fractures and dislocations in children and adults. Almost one day will be devoted to injuries of the hand—principles of primary care of the hand, fractures, tendons, nerves, plastic procedures and complications of hand surgery.

Other topics to be discussed include plastic surgery of the extremities, ligamentous injuries, what's new in bone grafting, herniated lumbar intervertebral disc, plaster and traction and amputation technics. There will be a question and answer period after each presentation, as well as audio-visual presentations and panels.

Dr. Jorg Bohler, professor of accident surgery at the University of Vienna, and eminent orthopaedic surgeon of Linz, Austria, will give eight lectures. Son of Dr. Lorenz Bohler, who is regarded by many as the "Father of Traumatic Surgery," Dr. Jorg Bohler is also director and chief surgeon at the Accident Hospital in Linz. The Bohler family has established nine accident hospitals in Austria, and their crusade on behalf of care of the injured is world-famous.

The registration fee is $75.00. Each registrant will be a guest of the Chicago Regional Committee on Trauma for one luncheon and for the annual cocktail party Thursday evening, April 29, at the Drake Hotel.

Iowa Chapter of the American Academy of General Practice

General Practitioners Should Increase Their Participation in Committees on Voluntary Insurance and Prepayment Plans

Each AAGP commission or committee can assist the state or local group by developing and publishing guides for general practitioners. The Committee on Medical Economics offers the following suggestions as a guide to those general practitioners who show interest in the economics of voluntary insurance programs. The general practitioner should be concerned with and use his influence:

1. To maintain fiscal and actuarial soundness in Blue Shield or insurance company activities.

2. To seek to achieve maximum administrative and operational efficiency at reasonable cost.

3. To maintain current interest in and knowledge of socioeconomic changes pertinent to prepayment programs for the public.

4. To keep abreast of new developments in medical science and their influence on voluntary health-insurance programs.

5. To carry out the profession's responsibility for quality and for reasonable fees for medical services provided under voluntary health insurance.

6. To maintain the clear distinction between hospital services and medical services.

7. To promote voluntary methods for the public to use in meeting the costs of medical care.

8. To augment the profession's other activities in public service by working closely with employers, labor, and others interested in prepayment for health service.

9. To promote research in the field of voluntary health insurance.

10. To continue to experiment with methods of providing voluntary health insurance for special risk groups, e.g., the aged.

11. To keep the profession informed of present voluntary health insurance available and of trends and problems in the field.

12. To represent the individual patient's interests at the policymaking level.

13. To preserve free choice of physician.

14. To avoid any effort to distort the practice of medicine to fit insurance mechanisms.

15. To provide continuing liaison with medical societies and hospital medical staffs for patient welfare.

16. To encourage younger physicians' participation in medical economics and voluntary insurance programs, and to provide for their advancement in committee activities.

MEET YOUR FRIENDS & COLLEAGUES

At The

1965 Annual Meeting

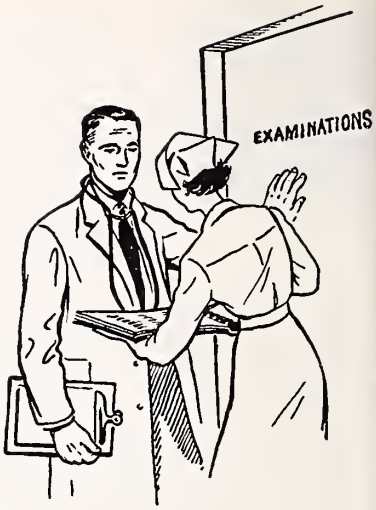
of the

IOWA MEDICAL SOCIETY

House of Delegates—April 11 & 14—Savery Hotel
General Sessions & Exhibits—April 12 & 13—
Fort Des Moines Hotel

A Detailed Program Will Appear in the
March Issue of the IMS Journal

THE DOCTOR'S BUSINESS



How Much Life Insurance?

HOWARD D. BAKER
Waterloo

Very frequently a client asks us this question: "How much life insurance should I have?" The client expects an answer in terms of "averages" or some "rule of thumb." True, there are many such figures and formulae. Some say that a person should spend approximately 10 per cent of his annual income for insurance. How much insurance will this buy? We all know that $1,000 may pay the annual premium on a $15,000 Retirement Income policy, or it may pay the annual premium on $170,000 of Decreasing Term insurance. The age of the insured and the type of insurance are the deciding factors. Another fallacy in this approach is the assumption that everyone can afford to spend 10 per cent of his annual income for insurance—no more—no less. Such an idea is indefensible. It just isn't true.

A second approach is to try to fix the dollar amount of insurance according to income. Some advocate coverage equal to four or five times the individual's annual income. There are many pitfalls in this approach. To use an exaggerated example, this approach would dictate $300,000 of insurance for a doctor, age 55 and single, with a net income of $75,000 and with assets of $450,000. At the other extreme, it would dictate $80,000 of insurance coverage for the 33-year-old doctor earning $20,000, with a 30-year-old wife and four young children, with debts of $25,000 and with no income-producing assets. In neither case would the doctor have the proper amount of insurance in his portfolio.

What, then, is the correct answer to the question, "How much life insurance?" In our opinion, there can be no stock answer and no application of "guides" or "rules of thumb." Every such question much be approached from an individual standpoint, and answered after a thorough analysis of needs, of present insurance, of other assets, and finally, of the client's ability to pay the premiums required for such a program.

To approach an individual and personal insurance problem on the basis of the "average" is no different from assessing the situation of a man who has his head in an oven and his feet in a freezer, and concluding that *on the average* he feels just right. Our adopting such an approach to our clients' insurance problems would mean that only a scattered handful would have the *right* amount of coverage, though each of them would have an *average* amount.

INDIVIDUAL ANSWERS TO BASIC QUESTIONS

The following are some basic questions that we urge upon men who are planning insurance programs:

1. Since insurance is a disaster type of protection, what exactly do you want to provide for your family if you die? How much for debt, for education, for estate costs, for current expenses and for monthly income?
2. How far will your present resources, including your present insurance and all your other assets, go toward fulfilling these needs?
3. What additional insurance should you have in order to satisfy the remainder of your needs? (In answering this question, your insurance advisor can fill temporary needs with some of the various term contracts available. Permanent needs will probably best be satisfied by means of a low-cost permanent contract.)
4. Finally, is the cost of the additional insurance reasonable and within your budget? (If not, needs must be trimmed and/or more term insurance used.)

In adopting this approach, we are not considering our client as an "average" or a "statistic"; we are considering him an individual.

In summary, to assure an adequate life insurance program at a realistic cost, use an impartial advisor, take an individual approach, be realistic in weighing your needs and, finally, buy insurance for *protection,* not for investment purposes.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Iowa Association of Medical Assistants

Medicines and Drugs

The frequency of referrals to dictionaries and textbooks is one indication of our need for information. In our daily work, medical and pharmacologic terminology constitutes one of our tools. Though knowledge and understanding are in some ways synonymous, knowledge can indicate *awareness of* or *recognition,* but not necessarily *comprehension.* We as medical assistants, are not prescribing for patients, but it is important for us to understand the terms used by the doctors and pharmacists with whom we are associated. In addition to knowing common types and preparations of drugs, we must know the regulations governing their sale.

Drug standards are established by the Secretary of Agriculture under authority of the 1938 Federal Food and Drug Act. Years of research by the manufacturer are necessary before any preparation can be put on the market. Further testing is done by the U. S. Government, the American Medical Association and the American Dental Association. Probably the most widely publicized drug to be withdrawn, as a result of federal research, was Thalidomide. We are all acquainted with its intended use and the frightful aftermath of its use by pregnant women.

The Durham-Humphrey Act of 1951 permitted a pharmacist to fill prescriptions telephoned to him by a physician, except for narcotics. Many medications are sold "over-the-counter" and do not need prescriptions. These, known as "proprietary" medicines, are under patent by a private owner. A drug for which a prescription is needed cannot be refilled unless the physician has so ordered.

The Harrison Narcotics Law of 1915 governs the prescription and sale of narcotics. Anyone dealing in narcotics is required to register with the Collector of Internal Revenue by July 1 of each year and to pay an annual tax. The tax receipt is NOT a permit to sell or prescribe narcotics. In the event of change of address or ownership, the Collector of Internal Revenue must be notified IN ADVANCE. A physician's narcotic stamp allows him to prescribe and sell narcotics only under the name and address listed on the stamped tax receipt.

It is the duty of a medical assistant, in most offices, to keep an accurate record of narcotics administered or dispensed. The following should be recorded and kept on file as a permanent record:

1. Full name and address of patient
2. Date and time administered
3. Type and quantity of narcotic given
4. Diagnosis (reason for giving)

Prescription blanks should be well guarded. If for any reason they are to be discarded, they must not be used for scratch paper. Tear them up or burn them to avoid their being used by unauthorized persons.

The drugs that are prescribed by your physician come from three main sources: plants, animals and minerals. Vegetable products are derived from roots (ipecac), leaves (digitalis), bark (quinine), seeds (psyllium), and sap (opium). Hormones, glandular extracts, lanolin, etc., are prepared from animal substances. Sulphur and coal tar derivatives are mineral products. Many modern medicines are the products of chemical synthesis.

The following definitions add to our understanding of drug terminology.

Pure drug: Unadulterated—100 per cent concentration.
Saturation: A solution is saturated when no more of any substance can be dissolved or remain in solution.
Stock solution: Concentrated or saturated solution used to prepare less concentrated solutions.
Tincture: An alcoholic preparation of another chemical substance.
Mixture: A liquid preparation of drugs which unite without chemical action and retain their individual properties.
Emulsion: An oily substance held in liquid suspension.
Elixir: A sweetened, aromatic, alcoholic preparation used as a base for medicine.
Syrup: A sweetened solution to which medicine is added.
Diluent: An additive to reduce the strength of a mixture or solution.
Suspension: A liquid in which non-dissolved particles are diffused. Requires "shake well" label.
Extract: A product obtained by dissolving a substance in alcohol or water and evaporating to desired consistency.
Pills: Round or oval-shaped products of sugar, starch and medicinal substances, coated or uncoated.
Tablets: Flat, molded or compressed preparations containing medicine and lactose (sugar of milk).
Capsules: Soluble containers enclosing medicinal powders or liquids.
Suppositories: Drug mixture of bullet-type formation for introduction into a body orifice.
Ointment: A preparation of medicine in fatty base for external use.
Solution: This has two components—the solute (substance dissolved) and solvent (liquid in which the

solute is dissolved). If water is used as the solvent, the result is an aqueous solution.

Latin terminology and abbreviations are still widely used in the writing of prescriptions. The following are the most common:

āā—of each
a.c.—before meals
ante—before
a.m.—morning
aq.—water
b.i.d.—2 times a day
c̄—with
caps.—capsule
comp.—compound
contra.—against
dil.—dissolve
dilut.—dilute
div.—to be divided
dos.—doses
elix.—elixir
emul.—emulsion
et—and
f.—make
fl.—fluid
gt(t).—drop(s)
h.—hour
h.s.—bedtime
kg.—kilogram
m.—mix
mg.(mgm.)—milligram
noct.—night
mcgm.—microgram
o.h.—every hour
o.m.—every morning
o.n.—every night
p.c.—after meals
p.r.n.—whenever necessary
q.—every
q.h.—every hour
q.i.d.—4 times a day
q.2h.—every 2 hours
q.4h.—every 4 hours
q.n.—every night
q.n.s.—quantity not sufficient
q.s.—quantity sufficient
Rx—take
s̄.—without
sat.—saturate
sig.—write on label
sol.—solution
ss—one-half
stat.—immediately
suppos.—suppository
syr.—syrup
tab.—tablet
t.i.d.—3 times a day
tr.—tincture

Prescriptions employ both the Apothecaries' and Metric systems and Roman numerals.

Apothecaries'	*Metric*	*Household Equivalent*
minim. (min)	0.06 cc.	1 drop
dram (dr.)	4 cc.	1 teaspoon
fluid dram (fl. dr.)	60 drops	
ounce (oz.)		8 teaspoons
fluid ounce (fl. oz.)	30 cc.	⅛ cup
pint (pt.)	500 cc.	½ cup
gallon (gal.)	4,000 cc.	4 quarts
grain (gr.)	0.06 gram	
milliliter	1 cc.	
2.2 pounds	1 kilogram	

For further information or study we suggest the following:

UNITED STATES PHARMACOPEIA (U.S.P.)
PHYSICIANS' DESK REFERENCE, published by Medical Economics, Inc.
THE OFFICE ASSISTANT, by Frederick & Towner
THE MEDICAL ASSISTANT, by Miriam Bredow

HELEN G. HUGHES

AMA Will Issue Birth-Control Information to M.D.'s

Sometime this year, physicians will begin to receive information from the AMA on various aspects of human reproduction and population control. No information will go directly to the general public. "To avoid misunderstandings, this point should be emphasized," says Raymond T. Holden, M.D., chairman of the AMA Committee on Human Reproduction. "Ours is a physician-oriented program only. The AMA has no plan to begin a program of sex or birth-control education for the lay public."

The recommendation of the Committee on Human Reproduction, approved by the AMA Board of Trustees and House of Delegates at Miami Beach last November, now constitutes AMA policy on this subject. It contained the following four points: (1) The problems that relate to human reproduction, including the need for population control, are more than a matter of responsible parenthood; they are a matter of responsible medical practice. (2) The medical profession should accept a major responsibility in such matters as they affect the total population and the individual family. (3) Physicians must be prepared to provide counsel and guidance when the needs of their patients require it, or to refer them to appropriate persons. (4) The AMA shall take the responsibility for disseminating information to physicians on all phases of human reproduction, including sexual behavior, by whatever means are appropriate.

The Committee will prepare and distribute to physicians a handbook on all phases, methods and aspects of reproductive control. It will replace the chapter on contraceptives in NEW AND NONOFFICIAL DRUGS. "The proposed change in NND was one of the reasons we recommended publication of a handbook," Dr. Holden said. "Also we felt that it would be helpful to have this information gathered into a compact, separate booklet. We want it to be complete, informative and concise."

The AMA House of Delegates, at its Miami Beach meeting, also approved the Committee's recommendation "that emphasis be given to teaching in medical schools the total picture of reproduction including sexual behavior." Dr. Holden said that the Committee had found little teaching of population problems in medical schools, though certain ones of them offer some instruction regarding contraceptive measures. "We felt that this was something that should be taken up on a broader scale throughout the medical curriculum," he observed. "We believe this can be accomplished without changing the medical curricula." Consequently, the Committee has prepared an outline showing how many facets of the subject of human reproduction can be integrated into the present four-year medical school curriculum.

The 1965 King-Anderson Bill Is Inferior to

Voluntary Health Insurance for the Near-Needy Elderly

On January 9, the American Medical Association proposed an alternative to the King-Anderson Bill of 1965—an alternative which is consistent with the position long maintained by the medical profession on the financing of health care for the elderly, but one which provides a better way of achieving the announced objectives of Representative King, Senator Anderson and President Johnson. The AMA suggested empowering the states to spend federal-state funds for all or parts of the premiums on a comprehensive health-insurance policy for each elderly person whose statement of income and assets showed that he or she couldn't afford the total cost.*

Iowans will remember this arrangement as precisely that which the 1963 General Assembly of Iowa envisioned when it implemented the Kerr-Mills Law for this state. At the urging of the Iowa Medical Society and allied groups, the legislators insisted upon the hiring of an independent fiscal agent so that Medical Assistance for the Aging might be kept separate from the older "categorical assistance" programs, and so that an actuarial basis could thus be laid for a subsidized health-insurance plan in future years.

The AMA intended, in making its proposal, that the necessary funds should come from general revenues of the federal and state governments, its reasons being that the Social Security System ought not to be burdened further, and that the Social Security levy is essentially a level tax, bearing just as heavily upon the average wage earner with several children as it does upon the wealthy man or wealthy corporation with on child-support problems. Obviously, too, the AMA proposal would involve withholding aid from well-to-do retired people, many of whom, we are told, are prepared henceforth to let wage-earners bear the costs of their hospital and nursing-home sojourns, and to use more of their savings for travel and other luxuries.

The only argument for having wage-earners pay the health-care bills of old people, rich and poor alike, is that the impoverished might thus be spared the indignity of applying for aid and undergoing an investigation. The AMA alternative would require no more than a report like the individual income-tax return, an annual indignity and violation of privacy to which all of us have become inured.

IOWA'S EXPERIENCE SHOWS THAT THE SCHEME WOULD WORK

In Iowa, MAA has been in effect for 14 months and is almost completely satisfactory. It helps the near-needy to pay for virtually all types of health-care services and commodities, and it is flexible in that recent expenses for hospitalization and medical care are considered when applicants' resources are assessed. Waste has been reduced to a minimum. A few months ago, to test the adequacy of MAA in Iowa, the IMS bought ads in papers throughout the state to call attention to the program and to invite letters from elderly people whose needs it might have failed to satisfy. The ad campaign seemed temporarily to increase the numbers of applicants for MAA, but it elicited no valid complaints about the new arrangement.

Most others of the 40 states with MAA programs have far less comprehensive benefits than ours does, but if MAA were conducted nationally as it is in Iowa, where a program for 10,000 eligible aged is now reliably predicted to cost $10 million per

* When Dr. Donovan F. Ward, of Dubuque, president of the AMA, announced this proposal, he also suggested that determinations of need be made by state health departments, rather than by state departments of social welfare. The officers of the IMS regret that detail of the AMA plan, for they have been quite satisfied with the work of the Iowa State Department of Social Welfare in investigating and approving or rejecting applicants for MAA. Elsewhere there may have been dissatisfactions, but they want it understood that Dr. Ward, though an Iowan of whom they are very proud, was speaking for the AMA rather than for his state organization. Furthermore, they understand that the Iowa State Health Department has no desire to assume responsibility for such a program.

year, the nationwide cost would approximate $1 billion per year. A billion dollars is a great deal of money, but it is only about one-fifth of the probable cost of providing King-Anderson benefits to all people over 65, regardless of need.

KING-ANDERSON BENEFITS WOULD BE FEW AND COSTLY

Let's take a close look at the relevant provisions of the newest version of the King-Anderson Bill (S and HR 1, 89th Congress). The Bill fills 132 pages and deals with many topics. For example, it would require physicians henceforth to pay Social Security taxes, despite the fact that they retire 10 years later, on the average, than do other people, if indeed they retire at all. But let's consider just the provisions relating to health care for the elderly:

1. A patient's hospital expenses would be paid for no more than 60 days following any one admission, and his physician would be called upon to justify and to obtain federal permission for keeping him there longer than 21 days. Furthermore, the patient would have to pay for one day's care—about $40.
2. The patient would be eligible for just 60 days of nursing-home care following any one admission, and only at a nursing home affiliated with the hospital.
3. He would be eligible for up to 240 visits per year from a nurse, and for outpatient diagnostic services at a hospital.
4. He would not be assisted in paying for surgery and other medical care, or for drugs, dentistry and other necessaries.
5. Insurance carriers would be exempt from prosecution under the anti-trust laws if they chose to band together to provide low-cost coverage to the elderly for services and commodities not provided under the program.

It goes without saying that these King-Anderson benefits are pretty thin! The $40 deductible on the cost of a hospital stay would constitute a big stumbling-block for the economically-marginal elderly for whom the program was intended, and there are some who couldn't easily afford the premium that would be charged them for an insurance policy covering surgery, doctors' calls, dentistry, medicines, eyeglasses and the rest.

Now let's take a look at how much our taxes would be raised to pay for these slight benefits. At present, on the first $4,800 of an employee's annual earnings, the Social Security tax is 7.25 per cent, paid in equal shares by the employee and his employer. An increase which is already scheduled for 1966 will bring the percentage to 8.5, and another in 1968 will make it 9.25. To those who insist that only half of the tax must be paid by the employee, it can be pointed out that money which an employer pays as tax on behalf of his employee is money that he can't put into the employee's pay envelope. Thus, in effect, the employee pays the entire rate.

If King-Anderson were adopted, the wage base for the Social Security tax would be increased to $5,600 in 1966, and the tax rate would be raised to 8.5 per cent at that time, to 10.0 per cent in 1968, and to 10.4 per cent in 1971. The Social Security tax on the incomes of self-employed persons in "covered" occupations is now 5.4 per cent of the first $4,800. An increase to 6.2 per cent will occur in 1966, according to the present schedule, and another hike to 6.9 per cent will occur in 1968. With the adoption of King-Anderson, the base would be raised to $5,600 and the rate would be increased to 6.4 per cent in 1966, to 7.5 per cent in 1968, and to 7.8 per cent in 1971.

How much more, in actual dollars per month, would King-Anderson take each month from a person who works for a wage or salary? First, it must be remembered that one of the provisions of the current King-Anderson Bill is the 7 per cent increase in cash benefits to OASI recipients which was originally proposed to Congress last fall. Thus, health-care wouldn't constitute all of the new extras to be paid for. The 1966 changes in wage base and tax rate would increase the monthly take from each person earning $5,600 or more from $29 up to $39.67. In 1968 the tax would rise to $46.67 per month, and in 1971 it would rise again, to $48.53 per month, for a total increase of $29.53 per month. The tax for the self-employed individual with an income of $5,600 or more per year is now $21.60 per month. With the adoption of King-Anderson, it would rise to $29.87 per month in 1966, to $35 per month in 1968, and to $36.40 per month in 1971, for a total increase of $14.80 per month. These aren't negligible increments, especially when one thinks of them as enforced contributions, to a considerable extent, toward the financing of health care for people altogether capable of paying their own way!

SUMMARY

The AMA alternative for the current version of King-Anderson, then, calls for federal-state subsidizing of health-insurance policies for elderly people if—and precisely to the degree that—their financial reports have indicated their need for such help. The proposal is consistent with the stand that the AMA has long maintained, and the scheme resembles Iowa's MAA except in that it would employ one or more insurance companies as underwriters rather than as fiscal agents.

Some of its advantages are:

1. It would utilize health insurance for complete coverage, rather than just for services other than hospital and nursing-home care, and it would help beneficiaries pay for the whole package.
2. It would spread the cost of the program among all tax-paying Americans, strictly according to their respective abilities to pay.
3. It would waste no tax money on the health-care bills of solvent elderly people.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Public Health Nursing in the Iowa Counties

Frequently people ask, "What does the public health nurse do? What takes up most of her time?" Perhaps the following breakdown may answer some of those questions.

In providing guidance to county public-health nurses, the nursing staff of the Iowa State Department of Health helps them evaluate their services on a day-to-day basis. Periodically, however, it makes appraisals from the statistical reports. Such reports have several purposes. Their prime value is to enable the public health nurse to determine whether her services are in keeping with public health trends, and are meeting community needs. They also provide objective information for employing groups and others interested in public health work.

These reports serve still another purpose in that they provide data on which to determine whether some of the public health nurses' activities should or should not be performed by other workers.

The following tabulation covers five biennial periods, and shows the percentages of the nurses' time that was devoted to each of eight types of services to individuals:

It will be noted that the percentage of a nurse's time devoted to communicable disease has declined by 4.7 per cent in the past decade. The decline in venereal disease service has been occasioned by the fact that public health investigators attached to the Division of Venereal Disease Control of the State Department of Health are performing this work. Tuberculosis control continues to get the largest percentage of time, in the communicable-disease phases of the nurses' work.

Maternity services on an individual-patient basis have declined. This is regrettable. However, more parents' classes and preschool conferences are being provided. At these group sessions, considerable individual counseling is given. The school health services have remained fairly constant over the 10-year period.

It is in adult health activities, which consist largely of services to the chronically ill and aging, that definite increases may be noted. This change is in keeping with population trends, and reflects the emphasis that is being given to services for the aging.

AVERAGE PERCENTAGES OF SERVICES TO INDIVIDUAL PERSONS PER PUBLIC HEALTH NURSE

	July 1-June 30 1954 1956	July 1-June 30 1956 1958	July 1-June 30 1958 1960	July 1-June 30 1960 1962	July 1-June 30 1962 1964
Type of Service	Percentage	Percentage	Percentage	Percentage	Percentage
Communicable Disease	7.85	5.05	6.76	5.73	3.15
Venereal Disease	.60	.40	.24	.16	.16
Tuberculosis	13.68	13.02	14.24	12.26	11.45
Maternity	4.16	4.01	3.29	2.68	2.79
Infant	4.76	4.87	4.12	3.55	3.57
Preschool	13.92	15.94	13.94	11.58	11.08
School	23.15	23.57	25.47	23.93	23.47
Adult	31.88	33.14	31.94	40.11	44.33
Total	100.00	100.00	100.00	100.00	100.00

Partial Summary of Immunization Surveys in Four Iowa Counties

During the summer and fall of 1964, immunization surveys were conducted in four Iowa counties, Wapello, Monona, Clay and Winneshiek. A random-sample type of survey which includes enough family units to give statistically accurate results has been set up nationally. Our survey group followed that program.

The two summary charts shown here give much of the information obtained. They show that immunization rates are low, and that our best-immunized groups were youngsters of elementary-school age. For purposes of the survey we used the following accepted basic criteria for immunization for smallpox, diphtheria and tetanus. Those who had had a series of immunizations or a booster within four years were considered immune. Although we advocate greater frequency of boosters for poliomyelitis immunizations, for the purpose of this survey we accorded immune status to those persons who had had a series or a booster as recently as 1959.

Because of the wide variations in immunization schedules employed by practicing physicians, it is rather difficult to determine adequate immunizations for children under one year of age. Since there is some controversy, we have omitted youngsters under one year of age from the overall tables of immunizations.

Tetanus immunizations are presented separately. In our previous work with tetanus immunizations, we have used different age groups. We have preferred to continue with those age groups, rather than to use the larger age groups employed in the national immunization surveys.

TETANUS IMMUNIZATION—ALL AGES

Age Group	Clay	Monona	Wapello	Winneshiek
1-4	91.7	83.1	61.8	71.7
5-9	88.5	71.4	76.6	63.1
10-19	58.1	60.9	44.5	35.0
20-29	28.7	32.8	28.5	26.5
30-39	30.7	30.9	24.5	35.2
40-49	20.2	23.7	23.2	20.6
50-59	12.9	13.0	19.1	9.8
60 & Over	9.8	5.8	9.4	9.0
Average All Ages	43.2	39.1	34.5	33.8

PER CENT IMMUNIZED OVER AGE ONE

Ages in Years	County	Number of Persons Interviewed	Oral Polio	Intravenous Polio	Total Polio	Smallpox	DPT
1-4	Clay	97	73.1	34.0	83.5	77.3	91.7
	Monona	83	42.1	51.8	67.4	43.3	83.1
	Wapello	318	38.9	37.9	59.4	35.6	62.5
	Winneshiek	85	64.7	37.6	77.6	47.0	71.7
5-14	Clay	224	82.5	54.0	95.5	45.0	78.1
	Monona	242	55.7	56.6	81.8	35.9	69.0
	Wapello	875	54.6	55.3	79.8	29.9	61.1
	Winneshiek	198	86.8	36.3	91.4	14.6	48.4
15-39	Clay	283	71.7	34.2	81.9	9.1	N.A.
	Monona	300	46.6	31.3	61.6	10.0	N.A.
	Wapello	1,162	40.9	38.5	61.4	8.9	N.A.
	Winneshiek	242	69.4	21.0	77.6	6.1	N.A.
40 & Over	Clay	324	31.1	9.8	34.2	3.7	N.A.
	Monona	439	21.4	4.7	22.7	4.5	N.A.
	Wapello	1,582	17.0	8.1	20.9	4.9	N.A.
	Winneshiek	301	28.5	2.6	28.5	3.9	N.A.
All Ages	Clay	928	60.3	30.4	68.7	23.0	N.A.
	Monona	1,064	37.9	27.7	50.6	17.9	N.A.
	Wapello	3,937	34.0	30.0	49.1	14.1	N.A.
	Winneshiek	826	58.2	19.7	63.0	11.6	N.A.
		6,755					

N.A. = not applicable to this age group.

Summary of Provisions of the Nurse Training Act of 1964

The Nurse Training Act of 1964 provides federal aid to nursing schools and to nursing students for the purpose of producing larger numbers of better qualified nurses for the nation. Based on the recommendations of the U.S.P.H.S. Surgeon General's Consultant Group on Nursing, the Act authorizes appropriations of $283,000,000 for the next five years to provide:

1. *Construction Grants* to collegiate, associate degree, and diploma schools of nursing for new facilities or for the rehabilitation or replacement of existing facilities.
2. *Teaching-Improvement Grants* to diploma, collegiate and associate degree schools of nursing for projects which will improve, strengthen, or expand teaching programs.
3. *Payments* to diploma schools to defray some of the costs of increased enrollments and to improve the quality of instruction.
4. *Traineeships for Professional Nurses* to increase the number of graduate nurses with preparation for positions as administrators, supervisors, clinical specialists and teachers in hospitals and related institutions, public health agencies, and schools of nursing.
5. *Loans to Student Nurses* to increase the number of nurses by helping recipients defray the costs of their nursing education, and by encouraging them to stay in active practice by a partial-cancellation clause based on their years of employment as professional nurses.

APPLICANTS for traineeships or loans should apply to the school or institution providing the training.

SCHOOLS wishing further information on any of the provisions of the Act should write to the Division of Nursing, Public Health Service, Department of Health, Education, and Welfare, Washington, D. C. 20201.

Human Anti-Rabies Globulin

The State Department of Health is cooperating with the Iowa Veterinary Medical Association and the U. S. Public Health Service, Communicable Disease Center in a program to develop a human anti-rabies globulin. This product will be designed to replace the equine serum currently available for treatment of human exposures. Such a product will eliminate the allergic and serum-sickness reactions so often seen when horse anti-rabies serum is used for human treatment. Veterinarians who had had one or more courses of Pasteur treatment and who volunteered were asked to take one booster dose of duck-embryo vaccine during the last week of December, 1964, to increase their antibody levels. A pint of blood was later collected from each of them at the time of the Iowa Veterinary Medical Association Annual Meeting, in Des Moines, in January, 1965. The serum will then be fractionated to obtain the anti-rabies globulin.

Morbidity Report for Month of December, 1964

Diseases	1964 Dec.	1964 Nov.	1963 Dec.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	372	282	198	Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	61	39	116	Polk
Whooping cough	4	4	3	Pottawattamie
Brucellosis	15	11	24	Scott
Chickenpox	748	507	267	Des Moines, Dubuque, Polk
Meningococcic meningitis	1	1	1	Fayette
Mumps	258	236	771	Des Moines, O'Brien, Polk
Poliomyelitis	0	0	0	
Infectious hepatitis	91	56	27	Cerro Gordo, Dubuque, Louisa
Rabies in animals	14	25	21	Benton, Lee, Palo Alto
Malaria	0	0	0	
Psittacosis	1	0	0	Linn
Q fever	1	0	0	Cerro Gordo
Tuberculosis	33	27	38	For the State
Syphilis	60	59	65	For the State
Gonorrhea	157	224	108	For the State
Histoplasmosis	183	2	2	Cerro Gordo
Food intoxication	0	13	35	
Meningitis (type unspecified)	1	3	5	Humboldt
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	0	
Salmonellosis	1	9	8	Wapello
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	1	0	
H. influenzal meningitis	0	0	0	
Amebiasis	2	1	4	Boone
Shigellosis	0	3	0	
Influenza	13	0	330	Johnson, Poweshiek

Institutes on Rehabilitative Care

The Divisions of Chronic Diseases and Hospital Services of the Iowa State Department of Health have developed an overall plan for a series of one-day Institutes on Rehabilitative Care.

W. E. Paul, M.D., director of the Rehabilitation Unit of the State University of Iowa, aware of the growing number of bed days required by our aging population, proposed programs of instruction in the care of immobilized patients. He especially suggested a rehabilitation team, available without cost other than actual travel expenses, that could present programs of practically applied technics of physical medicine in the day-to-day care of patients. He felt such programs would be of special interest and helpful to physicians and nursing personnel.

Physicians are concerned with the successful implementation of these technics of physical medicine as applied to their patients for they know that successful prognosis depends not only upon proper evaluation and prescription but upon quality bed care that will assure joint mobility and proper posture upon the return of function.

Regular members of the team organized to present these programs are Terry B. Jones, R.P.T., director, Department of Physical Therapy, S.U.I., and Miss Betty Lipman, R.N., supervisor of nursing, Rehabilitation Service, S.U.I. State Department of Health personnel working with them make arrangements for the utilization of local resources such as space and supplies and do the necessary liaison work with area people who participate in the programs. The cosponsoring agencies, Iowa Heart Association, Iowa Nursing Home Association, and Iowa Hospital Association, have supplied such supportive efforts as printing, consultation service, publicity, and volunteers for registration.

The first of these programs was presented November 17 at the Buena Vista County Hospital in Storm Lake. Thomas Shea, M.D., of Storm Lake acted as medical chairman of the program and addressed the participants on "Considerations of the Physician's Responsibility in the Management of Patients in Need of Physical Therapy." Eighty-six participants from a 15-county area were in attendance at that session.

Two local physicians, Einer M. Juel, M.D., and John Weresh, M.D., assisted in various phases of the second program presented at Heritage House, Atlantic, on January 12. A variety of participants, 68 in number, were in attendance.

Programs are tentatively planned for the following cities—Mason City, Dubuque, Waterloo, Marshalltown and Ottumwa. Announcements of specific sites and dates are made by invitations two or three weeks prior to presentation.

Discarded Hypodermic Syringes Are Used by Addicts, Children

Disposable hypodermic syringes, which are not destroyed, are being used by drug addicts, and also by children as toy water pistols. "While the street-corner addict has no absolute need for these devices . . . there seems no sense in making the habit that much easier or inviting children into harmful play," an editorial in the January 4 issue of JAMA declared.

"Public safety demands that responsible persons in hospitals, nursing homes, and medical offices completely destroy these disposables as soon after use as possible. Their after-lives may carry too high a price for the sake of convenience."

The disposable syringe, designed for one use only, was introduced in recent years as a convenience to the medical profession, hospitals, and nursing homes. These disposables must now be added to the "alarming number and variety of materials" that find their way into trash cans, or are kept only half safe behind locked doors, the editorial said. Reports from Illinois and New Jersey to the U. S. Bureau of Narcotics have confirmed the suspicion that disposable syringes are being used by addicts.

In a letter to the JOURNAL, published in the same issue, Joseph J. Healy, superintendent, Division of Narcotic Control, Illinois Department of Public Safety, said the final disposition of the used syringes and needles is causing concern since state inspectors have been called to investigate the possession of discarded syringes and needles by children who find them in garbage cans or sometimes in city dumps and who use them as "squirt guns."

In one case, he said, two young boys were caught attempting to inject air into the vein of a cat. Another investigation in downstate Illinois turned up a syringe containing a small amount of a narcotic drug in a bag of discarded disposable syringes, he added.

PLAN NOW TO ATTEND

SYMPOSIUM ON NEWER DEVELOPMENTS IN THE CONTROL OF CORONARY HEART DISEASE

2:00 P.M.—Monday, April 12

PANEL DISCUSSION ON DIAGNOSIS AND MANAGEMENT OF BILIARY TRACT DISEASE

2:00 P.M.—Tuesday, April 13

Grand Ballroom—Fort Des Moines Hotel

1965 IMS ANNUAL MEETING

Woman's Auxiliary News

Thoughts From the President

Monday, April 12, 1965, will mark the formal opening session of the 36th Annual Meeting of the Woman's Auxiliary to the Iowa Medical Society. It is the hope of your officers that each constituent Auxiliary will be represented by its full quota of delegates when the Auxiliary House of Delegates convenes at 9:00 a.m. They hope this, not for their personal aggrandizement, but because they know that only by having an opportunity to hear the opinions and wishes of all Auxiliary members can they formulate and help to achieve worthwhile objectives.

The determination of Auxiliary aims and the choice of Auxiliary projects must not be the privilege of a few. Rather, the responsibility must be shared by each member. When we fail in sharing this responsibility, we not only do an injustice ourselves and our organization, but we do an equal injustice to our physician husbands, whose trust and endorsement have made our activities possible.

Information relating to delegate selection and business to be transacted has been sent to your county president. Careful consideration of this information by each member is essential. Your delegates are the most important members of the Auxiliary Annual Meeting. Select them wisely; instruct them well. The actions of the Auxiliary House of Delegates must not be determined on the basis of default, but on the basis of positive permission from each constituent Auxiliary.

All Auxiliary members are welcome and are urged to attend the business sessions of the House of Delegates. Members may address the House of Delegates and participate in discussions of pending business, but only qualified delegates may introduce business or vote.

The success or failure of every organization lies in the hands of its members.

JANET ELLIS

Changed Dates for
Foreign Students' Weekend
Saturday and Sunday, Feb. 13 and 14
Des Moines

In Memoriam Contributions

A REMINDER

HELF AMA-ERF
THE IOWA MEDICAL FOUNDATION

The names of these organizations are familiar ones to every physician's wife. Again, we are reminding you that these worthwhile organizations may be supported by means of your contributions.

As a matter of fact, any person, whether a member or non-member of an Auxiliary, may send a contribution in memory of any deceased person, a contribution as a gift, or a contribution to celebrate a happy occasion.

MEMORIALS BY THE STATE AUXILIARY

a. The State Auxiliary honors each of its deceased members by a memorial contribution. This contribution in memory of the deceased member is sent to the State Auxiliary Health Education Loan Fund upon notification of the member's death.
b. Deceased physician-husbands of State Auxiliary members are also honored by memorial contributions from the State Auxiliary. In such a case, the contribution from the State Auxiliary will be sent in the name of the deceased to the AMA-ERF or to the Iowa Medical Foundation, as designated in the notification.
c. These notifications, containing the following information, should be sent promptly to Mrs. Byron M. Merkel, 730 Polk Boulevard, Des Moines, Iowa 50312:
   1. Name, complete address and county of deceased member or friend.
   2. Name, complete address and county of Auxiliary sending the notification.
   3. Name and complete address of person who is to receive the acknowledgment card of the memorial from the organization to which contribution has been sent.

SUCH MEMORIALS ARE NOT TO BE CONSTRUED AS SUBSTITUTES FOR THE CONTRIBUTIONS WHICH THE COUNTY AUXILIARIES SEND TO HELF, AMA-ERF, AND TO THE IOWA MEDICAL FOUNDATION.

For further details see the December, 1963, copy of the JOURNAL OF THE IOWA MEDICAL SOCIETY.

MRS. ELMER A. VORISEK
State Auxiliary Finance Secretary

Auxiliary Activities in Other States

In Maryland, Doctor's Day is celebrated throughout the state. Following the Governor's official proclamation of Doctor's Day, a variety of activities are carried out by local Auxiliaries. Flowers are placed in public buildings and hospitals; outstanding doctors are honored with newspaper releases; contributions are made to medical libraries; and social events are held for physicians. One county held an exhibit on the history of medicine last year. Another county honored a father-and-son physician team in the local newspaper. In some counties, ministerial associations were asked to recognize the doctors from their pulpits. A poster contest was a means of publicity used by one group. This project got strong support from the schools, with the result that many clever ideas were used in the posters and much public interest was aroused.

The Denver, Colorado, Auxiliary has organized Operation Friendship to help foreign doctors and their families obtain household furnishings.

The Pueblo, Colorado, Auxiliary prepared a bibliography, presenting the viewpoint of their doctors on health care for the aged under Social Security. Copies were placed in public and school libraries for use of high school students who engage in debate on the subject of "fedicare."

Orleans Parish Auxiliary, in Louisiana, at the request of the Tulane and L.S.U. medical schools, has again presented its program for fourth-year medical students', interns' and residents' wives entitled "How to Succeed as a Doctor's Wife Without Even Trying." Guest speakers give these new D.W.'s a great many worthwhile pointers about their future as wives of practicing physicians.

AAPS Essay Contest

The 1965 AAPS Essay Contest for high school students offers $2,675.00 in national prizes and three cash prizes at the state level. The topics are "The Advantages of Private Medical Care" or "The Advantages of the American Free Enterprise System Over Communism."

The Woman's Auxiliary to the Iowa Medical Society has participated in this program since 1957.

Last year, Iowa's first-place winner won sixth place in the national contest, our second-place winner won eighth place, and our third-place winner received honorable mention.

Essays should be submitted to your county medical society not later than March 1, 1965, and the best three essays must be sent on or before March 15 to:

Essay Contest, Iowa Medical Society, 529-36th Street, Des Moines, Iowa 50312.

Entries must reach the office by March 15 to be eligible for prizes.

Winter Blunderland

Winter Blunderland and how to avoid dangerous and costly winter driving blunders—Be clear sighted. Take a few extra minutes and clear the *entire* windshield before starting off. Clean side and back windows too. A snow brush with a plastic scraper on one end makes the job easier. Carry rags for lights and mirror.

Lemon or onion on your windshield? Save the groceries for better use. They only make a mess on the glass. So do glycerin and beeswax. Commercial spray de-icers work well, but be sure to wipe your windshield dry after using them, or hard-to-remove streaks may remain.

If your windshield wipers smear, they need adjustment or blade replacement. If your car has windshield washers, keep the reservoir filled with the recommended solution—not with just plain water.

Never drive with parking lights instead of headlights in winter's early dusk and poor visibility. Parking lights can cause an on-coming driver to think you are farther away than you are. Keep headlights clean; dirty ones can greatly reduce your own seeing-distance at night.

Be a self-starter. Don't end up calling a tow truck because of these blunders. Keep your tires at recommended pressure. Letting air out of today's low-pressured tires doesn't help. It only increases wear. About the only thing that will safely increase traction is the use of snow tires or chains.

It's a good idea to carry sharp sand just in case you do get stuck. Added weight in your trunk will only make steering tricky and make big skids out of little ones. Traction is increased so little that it's not worth the risk.

Start in second gear if you have a standard transmission. This gives you less force at the wheels and less spin.

Start gently. . . . very gently. Let your tires bite. Spinning only melts the ice and lets you make the icy surface slicker or digs you deeper into the snow. Keep your wheels pointed straight ahead, and if you must turn, give the wheels a few turns back and forth to open a path in the snow.

Keep going. When approaching a hill, get up enough momentum to reach the top. Slow down at the crest and watch out for stalled cars or obstacles on the down grade.

Learn the temperature traps. Ice and snow last longer in shady areas, under overpasses and on bridges. Be extra careful in such places.

Posted speed limits are intended for ideal conditions. In winter, half the posted limit may be too fast. The real speed limit is your good judgment.

Stop safely. Pump your brakes when you see you have to stop or slow down—don't jam them on!

Slamming on the brakes may cause you to lose control. To pump brakes properly, press and release the brake rapidly once or twice a second. Pumping action lets wheels roll for steering control, and helps prevent skids.

Beware of "warm" or "wet" ice. Ice and snow are twice as slippery at 30 degrees as they are at zero degrees. So be on guard when the temperature is just about freezing.

Be careful when approaching intersections. Heavy traffic at corners packs down snow. Spinning wheels polish the ice and make stopping a treacherous business. Start to slow down ahead of the intersection, and don't blunder into a needless accident.

Highlights From the AMA Clinical Convention House of Delegates Proceedings

Health care for the aging, a new teletype communications system for the medical profession, a statement on human reproduction and recommendations from the Commission on the Cost of Medical Care were among the major subjects acted upon by the House of Delegates at the American Medical Association's 19th Clinical Convention held November 29-December 2, 1964, in Miami Beach, Florida.

Tribute was paid to the late Dr. Norman A. Welch, AMA president who died on September 3, in a memorial statement from the Massachusetts Medical Society and in a resolution adopted by the House. Dr. James Z. Appel of Lancaster, Pa., vice-chairman of the AMA Board of Trustees and a member of the Board since 1957, was named president-elect of the AMA. He will become president in June, 1965, succeeding Dr. Donovan Ward, of Dubuque.

Definitive action on the issue of health care for the aging came with the House of Delegate's strong endorsement of Dr. Ward's address, in which he declared that "We have no choice except to stand firm in our efforts to prevent the standards of health care in this country from being undermined by a radical departure from the unique American way which has accomplished so much for mankind." Reaffirming the Association's opposition to the King-Anderson type of legislation, Dr. Ward said: "If we have been right in the past—and that is our unshakeable belief—then we are right today. And we shall be right tomorrow."

Calling for renewed, intensive effort to prevent the passage of such legislation, he declared "We do not, by profession, compromise in matters of life and death. Nor can we compromise with honor and duty." Expressing pride in the medical profession, Dr. Ward concluded his address with this statement: "I pray that we all gain strength for renewed effort by the simple reflection that what we are doing is worthwhile—that if the effort is great, the results of not making the effort would be unthinkable—and, finally, what we are doing is vastly more important than ourselves."

The House approved a recommendation from the Board of Trustees for establishment of a tele-typewriter communications service between the AMA and the state medical societies. (The Iowa Medical Society will participate in this communications system as soon as it becomes available, which should be no later than July, 1965. The IMS will be able to communicate directly with the AMA headquarters office, as well as with other state medical societies who subscribe to the system.)

In considering a wide variety of annual reports, special and supplementary reports, and resolutions, the House also:

Amended the Bylaws to permit the presidential inauguration to take place at a time other than Tuesday evening and approved a suggestion that the inaugural ceremony at the 1965 Annual Convention be held on Sunday, June 20;

Urged strong support of the Woman's Auxiliary and asked the state and county medical societies to give serious consideration to the idea of joint husband-wife membership;

Emphasized its continuing awareness of the demand for action satisfying the need for increasing numbers of family physicians;

Urged all state and component medical associations to approve, where feasible, the inclusion of a voluntary, nondeductible contribution to independent political action committees on the society's annual dues billing statement;

Approved a Board recommendation that the 1967 Clinical Convention be held in Houston, Texas.

The American Medical Association Education and Research Foundation reported to the House that one out of every six medical students, interns and residents in the United States is now receiving financial assistance from the Foundation's loan fund.

Recipe for a Happy New Year

Take 12, fine, full-grown months, see that they are thoroughly free from all old memories of bitterness, rancor, hate and jealousy; cleanse them completely from all clinging spite; pick off all specks of pettiness and littleness; in short, see that these months are freed from all the past. Have them as fresh and clean as when they first came from the great storehouse of Time.

Cut these months into 30 or 31 equal parts. This batch will keep for just one year. Do not attempt

to make up the whole batch at one time (so many persons spoil the entire lot in this way), but prepare one day at a time, as follows:

Into each day put twelve parts of faith, eleven of patience, ten of courage, nine of work (some people omit this ingredient and so spoil the flavor of the rest), eight of hope, seven of fidelity, six of liberality, five of kindness, four of rest (leaving this out is like leaving the oil out of the salad—don't do it), three of prayer, two of meditation, and one well selected resolution. If you have no conscientious scruples, put in about a teaspoonful of good spirits, a dash of fun, a pinch of folly, a sprinkling of play, and a heaping cupful of good humor.

Pour into the whole love *ad libitum*, and mix with vim. Cook thoroughly in a fervent heat; garnish with a few smiles and a sprig of joy; then serve with quietness, unselfishness, and cheerfulness, and a Happy New Year is a certainty.

H.M.S.

Reprinted from THE WAMAG PULSE LINE.

Auxiliary Activities Around the Hawkeye State

Pottawattamie County

More than 75 guests attended the dinner party that was held for the doctors and their wives Tuesday, December 15, 1964, at Club 64. The dinner was preceded by a social hour. Individual favors of Santas and Christmas trees constituted the place settings. A centerpiece of holly arranged with green and red ornaments was flanked with red tapers. Mrs. John W. Mathiasen and Mrs. Harold Trafton were co-chairmen for the festive evening. Highlighting the entertainment was a program of humorous pianologues by Mrs. T. E. Williams.

Black Hawk County

The members of the Black Hawk County Medical Auxiliary will be hostesses for a Mardi Gras, February 24, at Electric Park Ballroom. Charlie Trussell and his orchestra will provide music for dancing from 9 p.m. to 1 a.m. Dinner will be served from 7:30 p.m. to 10 p.m. The Medi-Cats will provide music from 7 to 8:30 p.m. Those attending are encouraged to wear costumes, but party dresses are welcome too. Ticket chairmen are Mrs. Thomas Board and Mrs. Fred Dick.

Doctor's Day, March 30

On Doctor's Day, members of the medical profession, both living and dead, are honored. The idea of setting aside a day of recognition for them originated with Mrs. G. B. Almond, of Winder, Georgia, and she proposed that March 30 be chosen for the observation, because it was on that day, in 1842, that her fellow Georgian, Dr. Crawford Long, initiated the technic of anesthesia, thereby making what many people believe was one of the world's ten greatest advances in medicine. Since Dr. Long's contribution symbolizes the consideration which all doctors have for their patients, and the concern that all of them have for the relief of pain, Mrs. Almond's choice was particularly appropriate.

Such a day of honor dedicated to all doctors was first proposed to the Woman's Auxiliary of the American Medical Association in 1934. It was enthusiastically adopted, and today the occasion is observed by almost every state in the union.

Auxiliary members honor their physician husbands by planning a social meeting at which the Auxiliary entertains their county medical society with a personal expression of appreciation to their busy doctors.

On March 30, they give to each of their doctors a red carnation in recognition of Doctor's Day, and and they honor retired doctors similarly. Sprays of flowers are laid on the graves of deceased physicians, and greeting cards are sent by the Auxiliaries to the physicians practicing in their respective areas.

The Auxiliary's Pledge of Loyalty

"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 50312

President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

Recording Secretary—Mrs. M. E. Olsen, Minden 51553

Corresponding Secretary—Mrs. C. W. Latchem, 942 56th Street, Des Moines 50312

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Throckmorton, 1201 64th Street, Des Moines 50311

Associate Editor—Mrs. J. G. Thomsen, 207 Glenview Drive, Des Moines 50312

JOURNAL of The IOWA MEDICAL SOCIETY

IN THIS ISSUE:

- IMS Annual Meeting Program—Page 105
- The Adequate Infertility Investigation—Page 119
- Psychological Aspects of Infertility—Page 122
- Male Infertility—Page 125
- Clinical Impressions of External Otitis—Page 129
- U. of I. College of Medicine Clinical Pathologic Conference—Page 132

Iron deficiency is effectively treated with Zentinic®

Zentinic is an oral multifactor hematinic in Pulvule® form. ■ It offers efficient treatment of iron deficiency in patients with menorrhagia, pregnant patients with depleted iron stores, and adolescent patients with erratic eating habits complicated by the onset of menstruation and rapid growth. ■ The Zentinic formula contains 100 mg. of elemental iron as ferrous fumarate and 200 mg. of vitamin C to aid absorption of the iron by helping to maintain it in the ferrous state. ■ In addition, the B complex vitamins are included for general nutritional support.

500232

Zentinic® Lilly

Multifactor Hematinic with Vitamins

MARCH, 1965

epilepsy can undermine self-reliance

"A therapeutic 'bull's-eye' may be scored with DILANTIN [diphenylhydantoin] even for a person with long-standing convulsions previously unrelieved by phenobarbital."* Such efficacy can make a substantial contribution to your epileptic patient's rehabilitation...improve his prospects for employment...foster greater self-reliance.

Indications: Grand mal epilepsy and certain other convulsive states. **Precautions:** Toxic effects are infrequent: allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Eruptions then usually subside. Though mild and rarely an indication for stopping dosage, gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered, especially in children, adolescents, and young adults. During initial treatment, minor side effects may include gastric distress, nausea, weight loss, transient nervousness, sleeplessness, and a feeling of unsteadiness. All usually subside with continued use. Megaloblastic anemia, aplastic anemia, leukopenia, granulocytopenia and pancytopenia have been reported. Nystagmus may develop. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. Adequate examination of the blood is advisable.
DILANTIN (diphenylhydantoin sodium) is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm.

*Lennox, W. G.: Epilepsy and Related Disorders, Boston, Little, Brown and Company, 1960, vol. 2, p. 865.

43264

PARKE-DAVIS

PARKE, DAVIS & COMPANY, Detroit, Michigan 48232

Dilantin®
(diphenylhydantoin)

PARKE-DAVIS

helps to restore confidence

IN THE TREATMENT OF SELECTED CASES OF PREMATURE LABOR

AND THREATENED

AND HABITUAL ABORTION

Lutrexin®

H.W.&D. BRAND OF LUTUTRIN

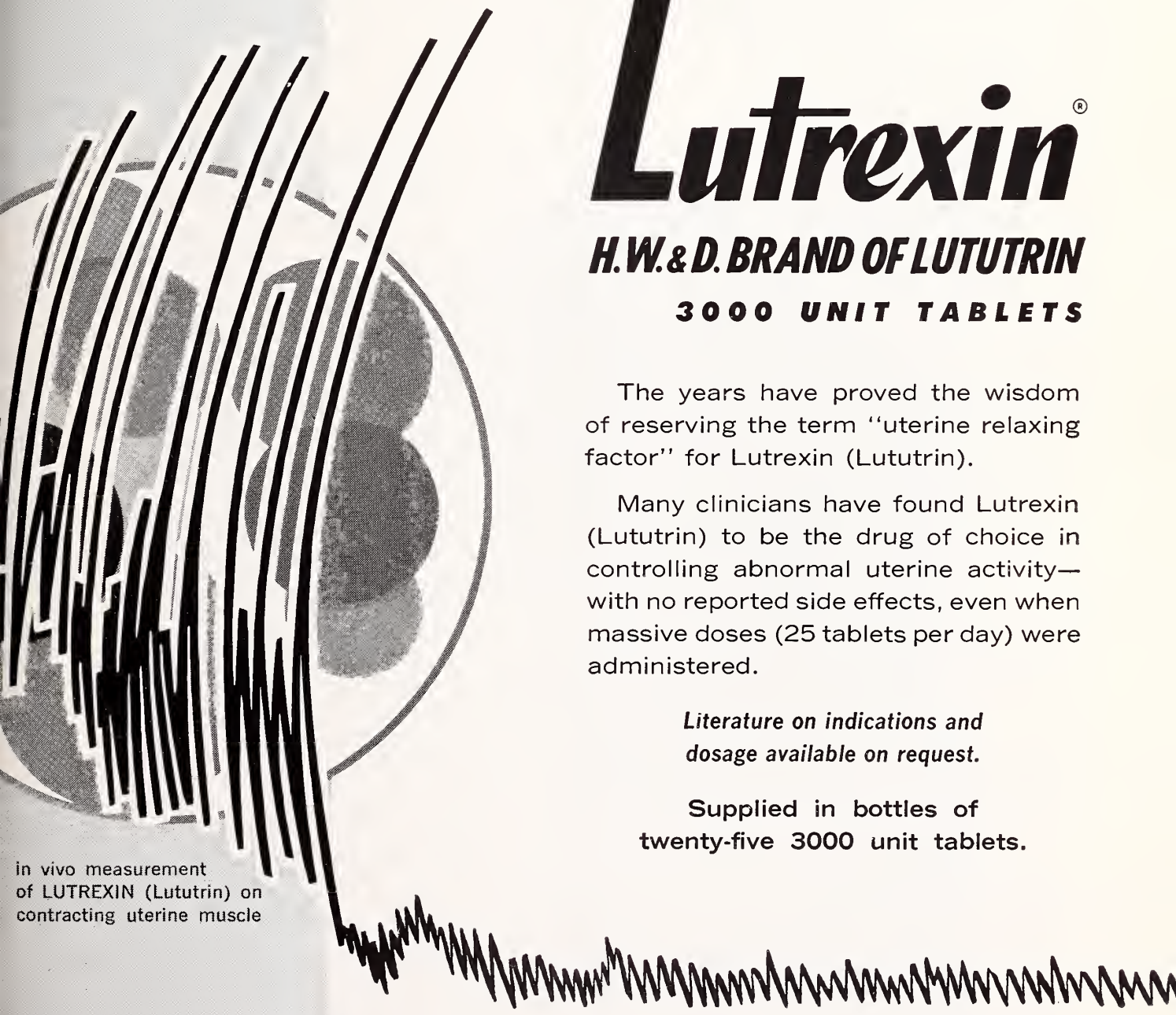
3000 UNIT TABLETS

The years have proved the wisdom of reserving the term "uterine relaxing factor" for Lutrexin (Lututrin).

Many clinicians have found Lutrexin (Lututrin) to be the drug of choice in controlling abnormal uterine activity—with no reported side effects, even when massive doses (25 tablets per day) were administered.

Literature on indications and dosage available on request.

Supplied in bottles of twenty-five 3000 unit tablets.



in vivo measurement of LUTREXIN (Lututrin) on contracting uterine muscle

HYNSON, WESTCOTT & DUNNING, INC.

(LTR21)

BALTIMORE, MARYLAND 21201

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV MARCH, 1965 No. 3

CONTENTS

IMS Annual Meeting Program 1965 105

SCIENTIFIC ARTICLES

The Adequate Infertility Investigation
James P. Jacobs, M.D. 119

Psychological Aspects of Infertility
A. S. Norris, M.D. 122

Male Infertility
R. G. Bunge, M.D. 125

Clinical Impressions of External Otitis
Ephraim L. Manning, M.D. 129

University of Iowa College of Medicine Clinical Pathologic Conference 132

EDITORIALS

Lest We Ride Off in All Directions 140

A Pattern for Retirement 140

Neurocirculatory Asthenia 140

Education for the Culturally Underprivileged . 141

Amputation for Diabetic Gangrene 142

Anesthesia and Ischemic Heart Disease . . . 143

For Your Bulletin Board 144

SPECIAL DEPARTMENTS

Letters to the Editor 145

President's Page 146

IMS Executive Council, January Sessions . . 147

Coming Meetings 150

Actions of AMA House of Delegates, Chicago, February 6-7, 1965 151

Iowa Chapter of the American Academy of General Practice 153

The Doctor's Business 154

Iowa Association of Medical Assistants . . . 155

Civil Defense Notes 157

In the Public Interest . . . . . facing page 158

Journal Book Shelf 159

State Department of Health 161

Woman's Auxiliary News 165

The Month in Washington xxii

Personals xxv

Deaths xl

MISCELLANEOUS

JAMA Urges Use of Brand Names in Prescriptions 145

Recommendations From the Academy of Pediatrics 156

Revised Manual of Standards for Ob-Gyn . . 158

Current Therapy in Cystic Fibrosis xliii

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor.....Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D.....Iowa City
Floyd M. Burgeson, M.D.....Des Moines
Daniel A. Glomset, M.D.....Des Moines
Robert N. Larimer, M.D.....Sioux City
Daniel F. Crowley, M.D.....Des Moines

PUBLICATION COMMITTEE

Samuel P. Leinbach, M.D.....Belmond
Cecil W. Seibert, M.D.....Waterloo
John H. Sunderbruch, M.D.....Davenport
Richard F. Birge, M.D., Secretary.....Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

IOWA MEDICAL SOCIETY

Organized in 1850

1965 ANNUAL MEETING

April 11-14

Hotel Fort Des Moines and Hotel Savery

Des Moines

Hotel Fort Des Moines

OTIS D. WOLFE, M.D.

President
Iowa Medical Society
1964-1965

GENERAL SESSIONS

Grand Ballroom

Monday Morning, April 12

8:00 a.m. EXHIBITS

8:55 a.m. Invocation
Reverend John H. Alexander, First Congregational Church, Marshalltown, Iowa

9:00 a.m. Otis D. Wolfe, M.D., Marshalltown, President, Iowa Medical Society

"Morality and the Welfare State"

9:30 a.m. An Address by the Governor
The Honorable Harold E. Hughes, Des Moines, Governor, State of Iowa

10:00 a.m. RECESS TO VISIT EXHIBITS

10:45 a.m. Luther L. Terry, M.D., Washington, D. C., Surgeon-General, United States Public Health Service

"Medical Services and Education in a Changing World"

11:15 a.m. Judge Byron B. Conway, Wisconsin Rapids, Wisconsin, President, National Council of Juvenile Court Judges

"Juvenile Delinquency"

11:45 a.m. RECESS TO VISIT EXHIBITS

12:00 noon Luncheon Program:

"Washington Investigations"
Clark R. Mollenhoff, Washington, D. C., Washington Bureau—Cowles Publications

Monday Afternoon, April 12

2:00 p.m. Panel Discussion:

"Symposium on Newer Developments in the Control of Coronary Heart Disease"

Lewis E. January, M.D., Iowa City—Moderator

William E. Connor, M.D., Iowa City

John C. Hoak, M.D., Iowa City

William B. Kannel, M.D., Framingham, Massachusetts

William L. Proudfit, M.D., Cleveland, Ohio

3:00 p.m. RECESS TO VISIT EXHIBITS

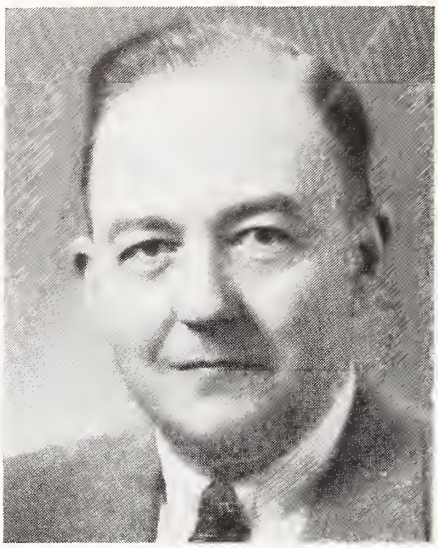
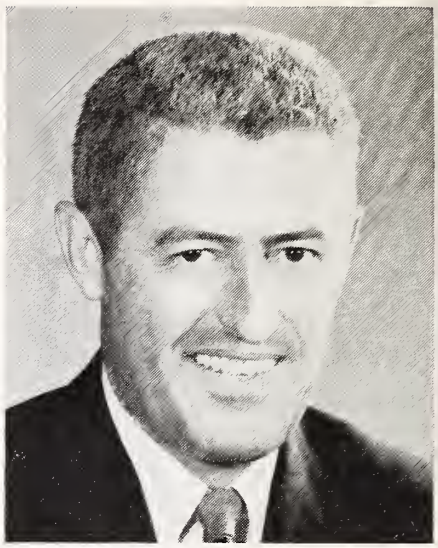
3:45 p.m. Robert R. Gilruth, D.Sc., Houston, Texas, Director, NASA Manned Spacecraft Center

"Manned Space Missions"

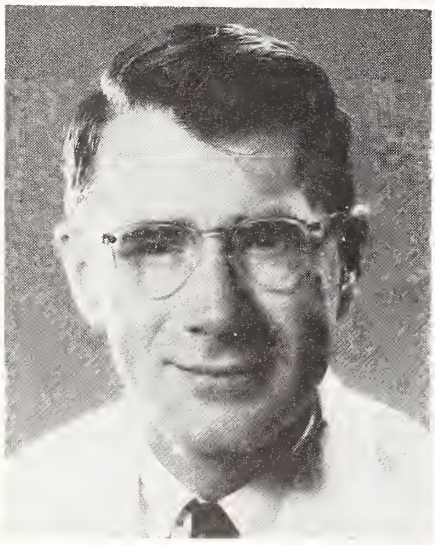
4:15 p.m. Col. Philip G. Keil, USAF, M.C., Washington, D. C., Director of Bioastronautics, Headquarters, Air Force, System Command, Andrews Air Force Base

"Space Medicine"

This Program Is Acceptable for
7 ACCREDITED HOURS
by the
American Academy of General Practice

Howard R. Bowen, Iowa City Iowa (left), President, University of Iowa; Chairman, National Commission on Technology, Automation and Economic Progress; Trustee, Institute of College and University Administrators. **Richard B. Capps, M.D., Chicago, Illinois (center),** Clinical Professor of Internal Medicine, University of Illinois Medical School; Governor, Chicago Institute of Medicine; Past President, American Association for the Study of Liver Disease. **James W. J. Carpender, M.D., Chicago, Illinois (right),** Professor of Radiology, University of Chicago Medical School; Director, Chicago Tumor Institute of the University of Chicago; President, American Board of Radiology.



William E. Connor, M.D., Iowa City, Iowa (left), Associate Professor, Department of Internal Medicine, University of Iowa College of Medicine. **Judge Byron B. Conway, Wisconsin Rapids, Wisconsin (center),** President, National Council of Juvenile Court Judges; Member, Special Study Committee on Juvenile Court Problems, American Bar Association. **Robert R. Gilruth, D.Sc., Houston, Texas (right),** Director, National Aeronautics and Space Administration Manned Spacecraft Center; Honorary Fellow, American Institute of Aeronautics and Astronautics; Recipient of a Medal for Distinguished Federal Civil Service from the President of the United States (1962).

General Sessions (Continued)

Grand Ballroom

Tuesday Morning, April 13

8:00 a.m. EXHIBITS

9:00 a.m. Donovan F. Ward, M.D., Dubuque, President, American Medical Association

"Today's Foremost Issue Affecting Medicine"

9:30 a.m. Howard R. Bowen, Iowa City, President, University of Iowa

"The Next Twenty Years in Higher Education"

10:00 a.m. RECESS TO VISIT EXHIBITS

10:45 a.m. Richard L. Varco, M.D., Minneapolis, Minnesota, Professor of Surgery, University of Minnesota Medical School

"The 'Right' Treatment of Carcinoma of the Breast"

11:15 a.m. Neal W. Klausner, Ph.D., Grinnell, F. Wendell Miller Professor of Philosophy, Grinnell College

"Philosophy and Medicine: A Common Ground"

11:45 a.m. RECESS TO VISIT EXHIBITS

12:00 noon Luncheon Program: The Arthur Erskine Memorial Lecture

"Radiation Therapy and Your Patient"

James W. J. Carpender, M.D., Chicago, Illinois, Professor of Radiology, University of Chicago Medical School

Tuesday Afternoon, April 13

2:00 p.m. PANEL DISCUSSION: DIAGNOSIS AND MANAGEMET OF BILIARY TRACT DISEASE

Frank Glenn, M.D., New York, New York—Moderator

Richard B. Capps, M.D., Chicago, Illinois

Charles B. Puestow, M.D., Chicago, Illinois

John T. Reynolds, M.D., Chicago, Illinois

Robert E. Wise, M.D., Boston, Massachusetts

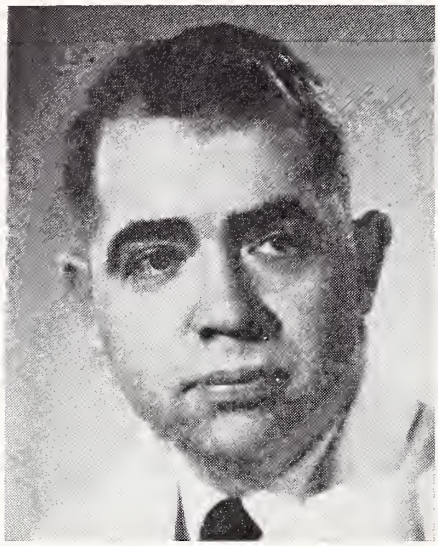
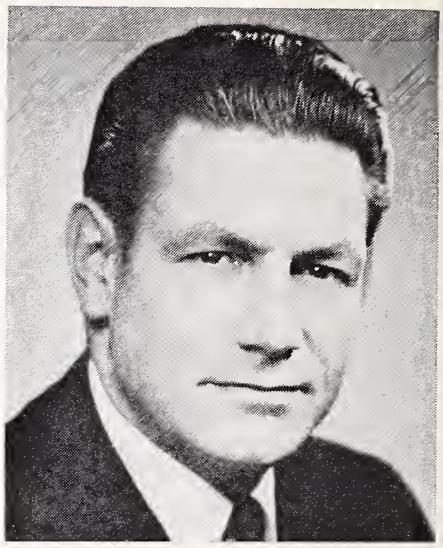
3:00 p.m. RECESS TO VISIT EXHIBITS

3:45 p.m. Giles Koelsche, M.D., Rochester, Minnesota, Consultant in Medicine, Mayo Clinic

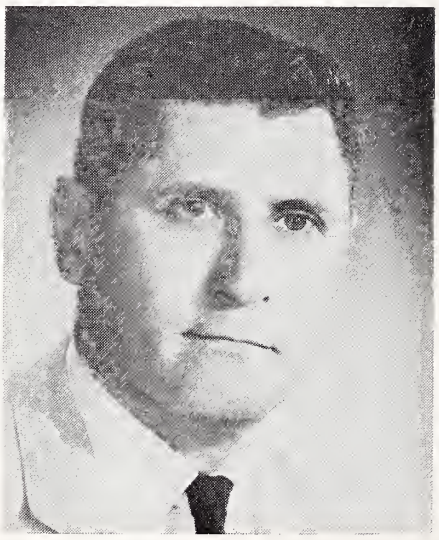
"Auto-Immune Diseases"

4:15 p.m. Gerald Solomons, M.D., Iowa City, Director, Child Development Clinic, University of Iowa College of Medicine

"The Hyperactive Child"

Frank Glenn, M.D., New York City, New York (left), Surgeon-in-Chief, New York Hospital; Lewis Atterbury Stimson Professor of Surgery, Cornell University Medical College; Special Consultant to the Veterans Administration; Consultant on Surgery, School of Aerospace Medicine, USAF. **John C. Hoak, M.D., Iowa City, Iowa (center),** Assistant Professor, Department of Internal Medicine, University of Iowa College of Medicine; Advanced Research Fellow, American Heart Association. **The Honorable Harold E. Hughes, Des Moines, Iowa (right),** Governor of the State of Iowa.



Lewis E. January, M.D., Iowa City, Iowa (left), Professor of Medicine, University of Iowa College of Medicine; Vice President and Member, Board of Directors, American Heart Association. **William B. Kannel, M.D., Framingham, Massachusetts (center),** Associate in Preventive Medicine, Harvard Medical College; Heart Disease Epidemiology Study, National Institutes of Health. **Neal W. Klausner, Ph.D., Grinnell, Iowa (right),** F. Wendell Miller Professor of Philosophy, Grinnell College.

Special Meetings and Dinners

Sunday, April 11

GOLF TOURNAMENT

The Annual Golf Tournament will be held at the Wakonda Club. Physicians may begin play at any time during the day, but the majority will start at 1 p.m. Dinner and awarding of prizes will follow. Reservations should be made with Harold J. McCoy, M.D., 212 Bankers Trust Building, Des Moines.

Monday, April 12

AMERICAN MEDICAL WOMEN'S ASSOCIATION, IOWA BRANCH 19

Members of the American Medical Women's Association, Iowa Branch 19, should register at the IMS Registration Desk at the Fort Des Moines Hotel. If a special meeting is arranged, specific details will be available at the Registration Desk.

INTERNATIONAL COLLEGE OF SURGEONS

Ranch Room, Hotel Fort Des Moines

Social Hour: 6 p.m.—Dinner: 7:30 p.m.

Guest Speaker: C. M. Kos, M.D., Iowa City

"Microscopic Movie of Surgery of the Ear"

Reservations: Webster Gelman, M.D.
2401 Towncrest Drive, Iowa City

IOWA ACADEMY OF SURGERY

Wakonda Club

Business Meeting: 5:00 p.m.

Social Hour: 6:30 p.m.—Dinner: 7:30 p.m.

Reservations: A. N. Smith, M.D.,
1407 Woodland Avenue, Des Moines

IOWA ASSOCIATION OF PATHOLOGISTS AND IOWA SOCIETY OF MEDICAL TECHNOLOGISTS

Hotel Fort Des Moines—North Room

Business Meeting (IAP)—5:00 p.m.

Cloud Room, Des Moines Municipal Airport

Social Hour: 6:30 p.m.—Dinner: 7:45 p.m.

Reservations: C. H. Denser, M.D.
1073 Fifth Street, Des Moines

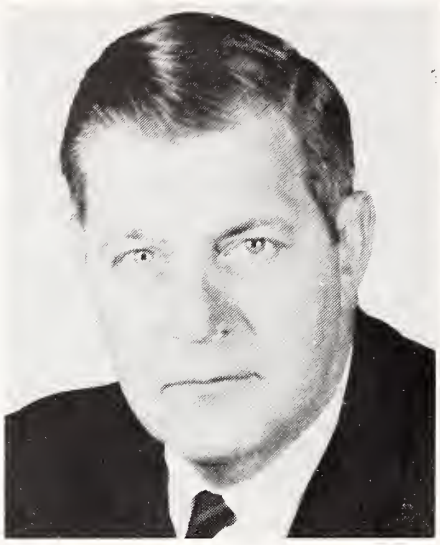
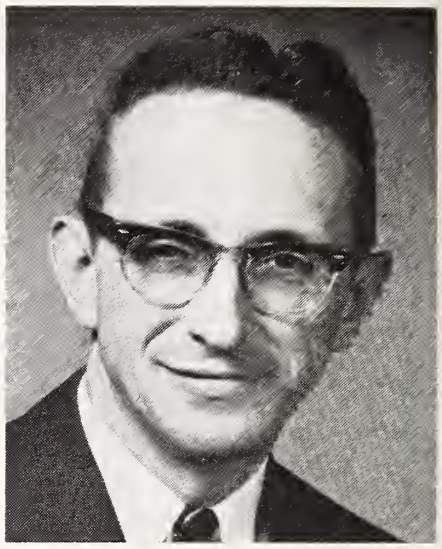
VISIT YOUR EXHIBITS

HOTEL FORT DES MOINES

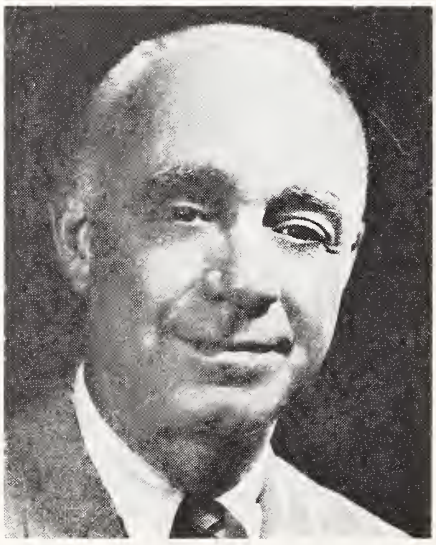
Technical Exhibits–Mezzanine Floor

HOURS

Monday, April 12—8 a.m. to 5 p.m.
Tuesday, April 13—8 a.m. to 5 p.m.

Giles A. Koelsche, M.D., Rochester, Minnesota (left), Consultant in Medicine, Mayo Clinic; Associate Professor of Clinical Medicine, Mayo Graduate School of Medicine, University of Minnesota; Secretary, Scientific and Educational Council, Allergy Foundation of America; Member, Executive Committee, International Association of Allergologists. **Clark R. Mollenhoff, Washington, D. C. (center)**, Member, Washington Bureau for Cowles Publications (DES MOINES REGISTER AND TRIBUNE, MINNEAPOLIS STAR AND TRIBUNE, and LOOK Magazine); Recipient of a Pulitzer Prize for National Reporting (1958); Journalism Lecturer, University of Michigan (February, 1965). **William L. Proudfit, M.D., Cleveland, Ohio (right)**, Division of Medicine, The Cleveland Clinic.



Charles B. Puestow, M.D., Chicago, Illinois (left), Clinical Professor of Surgery, University of Illinois College of Medicine and Graduate School; Member, Medical and Scientific Committee and Chairman, Tumor Clinic and Cancer Registry, Illinois Division, American Cancer Society; Member Program Committee for Annual and Sectional Meetings, American College of Surgeons. **John T. Reynolds, M.D., Chicago, Illinois (center)**, Clinical Professor of Surgery, University of Illinois College of Medicine; Member, American College of Surgeons and American Board of Surgery. **Gerald Solomons, M.D., Iowa City, Iowa (right)**, Director, Child Development Clinic; Assistant Professor, Department of Pediatrics, University of Iowa College of Medicine.

Special Meetings and Dinners (Continued)

IOWA RADIOLOGICAL SOCIETY

Colonial Room—Des Moines Club

Social Hour: 6:30 p.m.—Dinner: 7:30 p.m.

Reservations: L. L. Maher, M.D.
1419 Woodland, Des Moines

IOWA SOCIETY OF ANESTHESIOLOGISTS

Vic's Tally-Ho Restaurant

Social Hour: 6:00 p.m.—Dinner: 6:45 p.m.

Guest Speaker: Lawrence D. Ruttle, M.D.
Joliet, Illinois

"Obstetric Anesthesia in Private Practice"

Reservations: Merle Diment, M.D.
831 39th Street, Des Moines

IOWA SOCIETY OF INTERNAL MEDICINE

Johnny and Kay's Restaurant

Social Hour: 6:00 p.m.—Dinner: 7:00 p.m.

Reservations: Edward J. Hertko, M.D.
2932 Ingersoll, Des Moines

PAST PRESIDENT'S DINNER

Third Floor, Hotel Fort Des Moines—Room 332
Dinner: 7:00 p.m.

Tuesday, April 13

LEGISLATIVE CONTACT MEN

Terrace Room—Hotel Savery
Breakfast: 7:00 a.m.

PRESIDENT'S RECEPTION AND ANNUAL BANQUET

Hotel Fort Des Moines
Reception: 6:00 p.m.—North Room
Dinner: 7:00 p.m.—Grand Ballroom

BENEFIT DANCE

"Caduceus Capers"
Grand Ballroom—Hotel Fort Des Moines
8:30 p.m.
Don Hoy's Orchestra
Sponsored by the Woman's Auxiliary for the Benefit of Its Health Education Loan Fund.

Meetings of the
HOUSE OF DELEGATES

will be held in the
GRAND BALLROOM
SAVERY HOTEL

Sunday, April 11–9:00 a.m.
Wednesday, April 14–8:00 a.m.

All IMS Members Are Welcome

–PANEL PRESENTATIONS–

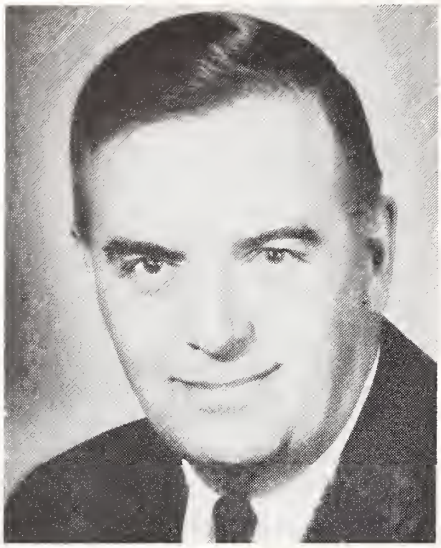
"SYMPOSIUM ON NEWER DEVELOPMENTS IN THE CONTROL OF CORONARY HEART DISEASE"

2:00 to 3:00 p.m.
Monday, April 12

"DIAGNOSIS AND MANAGEMENT OF BILIARY TRACT DISEASE"

2:00 to 3:00 p.m.
Tuesday, April 13

Plan Now to Attend



Luther L. Terry, M.D., Washington, D. C. (left), Surgeon-General, United States Public Health Service, Department of Health, Education and Welfare. **Richard L. Varco, M.D., Minneapolis, Minnesota (center)**, Professor of Surgery, University of Minnesota Medical School. **Donovan F. Ward, M.D., Dubuque, Iowa (right)** President, American Medical Association.

Robert E. Wise, M.D., Boston, Massachusetts, Chairman, Department of Diagnostic Radiology, Lahey Clinic Foundation. **Col. Philip G. Keil, USAF, M.C., Washington, D. C.**, Director of Bioastronautics, Headquarters, Air Force System Command, Andrews Air Force Base.

LUNCHEON PROGRAMS

Monday, April 12—12 O'Clock Noon

General Session

Grand Ballroom—Hotel Fort Des Moines

"WASHINGTON INVESTIGATIONS"

Mr. Clark Mollenhoff
Washington, D.C.

Mr. Mollenhoff, a Pulitizer Prizer Reporter for the Cowles Publications, will provide "behind-the-scene" information on recent Washington investigations—including those concerned with the TFX contract, Bobby Baker, and Otto Otepka.

ERSKINE MEMORIAL LECTURE

Tuesday, April 13—12 O'Clock Noon

General Session

Grand Ballroom—Hotel Fort Des Moines

"RADIATION THERAPY AND YOUR PATIENT"

J. W. J. Carpender, M.D.
Chicago, Illinois

Doctor Carpender will discuss the present day philosophy of radiation therapy—what conditions should and should not be treated; reaction and tumor response to radiation; the management of patients undergoing therapy.

Arrangements Will Be Made for Dutch-Treat Luncheons During These Programs. Details Will Be Provided at a Later Date.

The House of Delegates

Open to All Members

First Meeting—Sunday
April 11, 9:00 a.m.

Grand Ballroom
Savery Hotel

Roll Call

Approval of the Minutes of the Meeting held on April 29, 1964

Reports of Officers

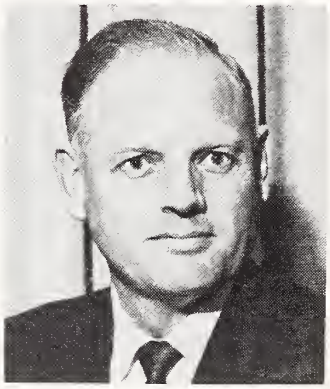
Nominations

Reports of Committee Chairmen

Memorials and Communications

New Business

SPEAKER



Paul M. Kersten, M.D.

Second Meeting—Wednesday
April 14, 8:00 a.m.

Grand Ballroom
Savery Hotel

Roll Call

Reading of Minutes

Election of Officers

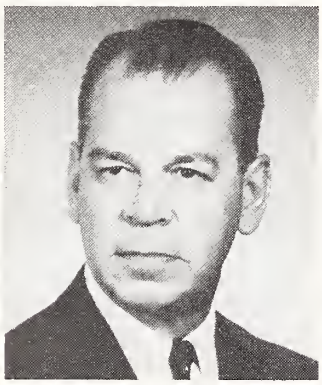
Reports of Committees

Unfinished Business

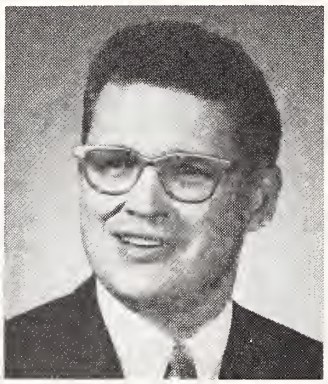
New Business

Adjournment

Program Committee



D. F. Crowley, Jr., M.D., Chairman



L. D. Caraway, M.D.

L. O. Goodman, M.D.

E. L. Rohlf, Jr., M.D.

E. F. Van Epps, M.D.

THE PRESIDENT'S RECEPTION
and
ANNUAL BANQUET

Tuesday, April 13—Hotel Fort Des Moines

PRESIDENT'S RECEPTION—6:00 p.m., North Room

(Blue Shield is arranging the reception in honor of Otis D. Wolfe, M.D., IMS President)

ANNUAL BANQUET—7:00 p.m., Grand Ballroom

Tickets Will Be Sold at the Registration Desk, Hotel Fort Des Moines

---

"CADUCEUS CAPERS"

Benefit Dance
for the

WOMAN'S AUXILIARY HEALTH EDUCATION LOAN FUND

Don Hoy's Orchestra
8:30-12:00

Grand Ballroom—Hotel Fort Des Moines

Tickets Will Be Sold at the Registration Desk, Hotel Fort Des Moines

TECHNICAL EXHIBITORS

Abbott Laboratories, North Chicago, Illinois

Americana Corporation, Beverly Hills, California

Ames Company, Inc., Elkhart, Indiana

Astra Pharmaceutical Products, Inc., Worcester, Massachusetts

Ayerst Laboratories, Chicago, Illinois

Bankers Leasing Company, Des Moines, Iowa

Blue Cross-Blue Shield Plans, Des Moines-Sioux City

Carnation Company, Los Angeles, California

CIBA Pharmaceutical Company, Summit, New Jersey

Control-O-Fax Accounting Systems, Waterloo, Iowa

Des Moines Flying Service, Des Moines, Iowa

Dictaphone Corporation, New York, New York

Dome Chemicals Inc., New York, New York

Encyclopaedia Britannica, Inc., Chicago, Illinois

Fuller Pharmaceutical Company, Minneapolis, Minnesota

Geigy Pharmaceuticals, Yonkers, New York

Great Books of the Western World, Chicago, Illinois

Hammer X-Ray Corporation, Minneapolis, Minnesota

Kersten Publishing Company, Fort Dodge, Iowa

Lazy M Shoes, Des Moines, Iowa

Lederle Laboratories, Pearl River, New York

Eli Lilly and Company, Indianapolis, Indiana

J. B. Lippincott Company, Philadelphia, Pennsylvania

Loma Linda Foods, Riverside, California

Mead Johnson Laboratories, Evansville, Indiana

Medco Products Co., Inc., Tulsa, Oklahoma

The Medical Protective Company, Fort Wayne, Indiana

Merck Sharp & Dohme, West Point, Pennsylvania

Merrill Lynch, Pierce, Fenner & Smith, Inc., Des Moines, Iowa

MID-AMERICAN Medical Supply Company, Sioux City, Iowa

Monarch Life Insurance Company, Des Moines

The National Drug Company, Philadelphia, Pennsylvania

Northwestern Bell Telephone Company, Des Moines, Iowa

ORTHO Pharmaceutical Corporation, Raritan, New Jersey

Parke, Davis & Company, Detroit, Michigan

Pepsi-Cola Bottlers Association of Iowa, Des Moines, Iowa

Pfizer Laboratories, New York, New York

Physicians & Hospitals Supply Company, Minneapolis, Minnesota

Picker X-Ray, Midwest, Inc., Omaha, Nebraska

Professional Credit Control, Inc., Lincoln, Nebraska

Professional Management Midwest, Des Moines, Iowa

The Prouty Company, Des Moines, Iowa

R & R Medical Equipment Division, Des Moines, Iowa

Riker Laboratories, Northridge, California

Roche Laboratories, Nutley, New Jersey

J. B. Roerig & Company, New York, New York

Sandoz Pharmaceuticals, Hanover, New Jersey

W. B. Saunders Company, Philadelphia, Pennsylvania

Schering Corporation, Union, New Jersey

G. D. Searle & Company, Chicago, Illinois

Sherman Laboratories, Detroit, Michigan

Siemens Medical of America Inc., Hinsdale, Illinois

Smith, Miller & Patch Inc., New York, New York

E. R. Squibb & Sons, New York, New York

Standard Medical & Surgical Company, Des Moines, Iowa

Thermo-Fax Dealers of Iowa, Des Moines, Iowa

Ulmer Pharmacal Company, Minneapolis, Minnesota

The Upjohn Company, Kalamazoo, Michigan

U. S. Vitamin & Pharmaceutical Corporation, New York, New York

Warner-Chilcott Laboratories, Morris Plains, New Jersey

Warren-Teed Pharmaceuticals Inc., Columbus, Ohio

Westwood Pharmaceuticals, Buffalo, New York

Winthrop Laboratories, New York, New York

X-Ray Identification Corporation, Dearborn, Michigan

Scientific Articles

The Adequate Infertility Investigation

JAMES P. JACOBS, M.D.
Iowa City

WHAT IS AN ADEQUATE infertility investigation? Do we have a plan, and if so, what is it? How can such a study best be accomplished? The following is a review of the readily available diagnostic procedures.

From a compilation of reports published in the literature, one finds that there are about 15 involuntarily childless couples per 100 married couples. These 15 constitute a challenge to the practicing physician.

There is no standard definition for the word *infertility,* and the statements in which it has been used appear inconsistent. In most instances their inconsistency is related to the length of time during which there has been coital exposure without a resulting pregnancy. For establishing infertility, the minimum time for coitus without contraception has varied from six months to two years. Personally, I believe that six months is sufficient to prove at least relative infertility.

A general review of the major causes of infertility and their frequencies reveals the following information. The cervical factor is incriminated in about 20 per cent, the tubal factor in 30 per cent, the male factors in 30 per cent, and hormonal derangement in about 15 per cent of cases. Our clinic has found that the hormonal factors and the male factors have somewhat higher incidences, but possibly our experience reflects our predominantly referral practice.

Fortunately, the intricate processes involved in human reproduction do not demand meticulous control or perfect performance. In most couples there is a helpful range of normal variation. There remain, however, a significant number of apparently healthy, regularly copulating couples who fail to reproduce, and it is to them that we must turn our attention. It is imperative that both marital partners share the responsibility in any planned investigation and in any subsequent therapy. Therapeutic nihilism is to be avoided, for it serves no purpose.

Although the ultimate aim is to achieve pregnancy and birth of a child, a second and equally important aim is prognosis. It is quite discouraging to see couples who have allowed several years to elapse, have seen several different physicians, and have never completed an evaluation. Thus, they have no idea regarding their potential, or how to plan their future.

Any infertility study should have a definite plan and a predictable end-point. Such a standardized program can usually be concluded in five or six office visits, extending over five or six months. The plan should be discussed with the couple at the initial interview, and their willingness to cooperate in it should be established.

THE MALE FACTORS

The study of the male partner should include a thorough history and a physical examination with special attention to the male genitalia. There should be laboratory studies, including urinalysis. The semen analysis should be performed on three fresh specimens. Often, as a result of the patient's stress or embarrassment in producing a fresh specimen by masturbation, the first count isn't necessarily a true indication of the male potential. Evaluation should include the days of continence, volume of semen, liquefaction, count expressed in millions per cubic centimeter, motility, abnormal forms and activity.

Dr. Jacobs is an assistant professor of obstetrics and gynecology at the U. of I. College of Medicine, and he gave this lecture at a postgraduate short course on infertility problems in Iowa City, early in 1964.

HISTORY TAKING AND PHYSICAL EXAMINATION OF THE FEMALE

In the study of the female partner, a definite plan for evaluating the factors concerned in successful reproduction should be established. Many technics have been developed for evaluating them. The plans that different physicians use will vary. However, a plea is made for the enthusiastic performance of each procedure undertaken, so as to insure complete patient evaluation.

Table 1 outlines the suggestions for investigation of the female partner. First is a complete history and physical examination. The former includes the patient's age, gynecologic history, length of present marriage, contraceptive technics, previous marriages and previous pregnancies. It is then helpful to determine the patient's knowledge regarding the physiology of menstruation, ovulation and conception. The physician should inquire about coital frequency, coital habits and positioning, and retention or loss of ejaculate. He can learn about the patient's emotional reactions, personality and mental attitude toward child-bearing, and he should direct his attention toward any problem that may be preventing conception.

TABLE 1

BASIC DIAGNOSTIC PROCEDURES—FEMALE PARTNER

1. History and complete physical examination.
2. Laboratory Studies.
   CBC, urinalysis, serology, cytology, P.B.I., hanging drop, chest x-ray.

The physical examination should be complete. The primary aim of the general physical examination is to uncover evidence of constitutional disease, organic abnormality and/or endocrine disturbances. As a part of the examination, a hanging drop of vaginal secretion is examined, and a blood count and a urinalysis are done. A cervical smear is taken. The values of a protein-bound iodine, a serology and a chest x-ray can be ascertained for each individual patient.

THE OVARIAN FACTOR

Several procedures are available for evaluating the ovarian factor (Table 2). The basal body temperature (BBT) graph is the most practical and valuable of these. Specific instructions must be given to the patient. Oral or rectal temperatures may be used. The instructions should include the placing of the thermometer upon awakening in the morning, leaving it for a full five minutes before ambulation, smoking or drinking, and immediately recording the temperature on the temperature record. Testape is no more accurate than a well-kept basal body temperature graph. Other technics for evaluating cyclic ovarian function include daily vaginal cytology or cervical mucus studies, but they are more complicated and time-consuming. Daily evaluation of cervical mucus for short periods of time—usually three to seven days—may be very valuable in the problem patient who has an atypical temperature graph.

TABLE 2

OVARIAN FACTOR

Basal body temperature.
Cervical mucus.
Testape.
Endometrial biopsy.

The endometrial biopsy is another indirect measure of cyclic ovarian function. This technic is a convenient office procedure for evaluating the responsiveness of the endometrium and for confirming the occurrence of ovulation. The removed tissue should be fixed in Bouin's solution. It is associated with minor discomfort, and in an occasional apprehensive patient a paracervical block may be performed to facilitate this examination. The timing of this procedure is important, and for the past three years I have tried to sample the endometrium on post-ovulation days four to six. Correlation of the endometrial histology with the basal body temperature record may be helpful.

THE CERVICAL FACTOR

The cervical factor (Table 3) is evaluated by serial cervical mucus examinations with reference to gross amount, appearance, spinnbarkeit, leukocytes, and arborization for ferning. The postcoital examination may be scheduled during a serial cervical-mucus study, or as an isolated office visit. Interpretation of a postcoital test is dependent upon appropriate timing in the menstrual cycle. A mucus specimen, preferably from high in the endocervical canal, is examined under high power magnification for sperm penetration, quantity, quality and viability. Six to 12 hours post-coitus is an appropriate time interval.

TABLE 3

CERVICAL FACTOR

Mucus studies.
Postcoital test.
Incompatibility test—cervical mucus and smear.

Cervical mucus and a fresh semen sample may be used for a compatibility test. A sample of cervical mucus and a drop of semen are placed on a clean glass slide, covered with a cover slip, and examined under high-power magnification for penetration of sperm into the cervical mucus.

TUBAL PATENCY

Tubal patency may be evaluated by several technics (Table 4). The simplest and least expensive is uterotubal insufflation, using carbon dioxide. This is a routine office procedure, and though some discomfort is associated with it, the pain is not incapacitating. The optimum time for it is after cessation of menstrual flow and prior to ovulation. There are some faults to be found with it, however. Functional occlusion may be encountered, and a negative test result doesn't always indicate organic disease. Conversely, when the test result indicates patency, there may be peritubal adhesions or endometriosis that may produce tuboovarian malfunction. Insufflation is incomplete unless the presence of gas under the diaphragm is confirmed by unequivocal shoulder pain or x-ray evidence. In the evaluation of tubal patency, it is essential to use an additional test whenever the result of the first one has been equivocal, and to use still other procedures if the result of the second one is likewise doubtful. Furthermore, if tubal patency has been confirmed by one test, if no other sterility factors have been uncovered, and if pregnancy has not occurred after several months, ancillary tests should be performed.

TABLE 4

TUBAL FACTOR

Uterotubal insufflation.
Hysterosalpinogogram.
Culdoscopy.

A triple tubal-patency investigation includes insufflation with carbon dioxide, hysterosalpingography, and culdoscopy with injection of indigo carmine dye and visualization of the fimbria of the tubes. The hysterosalpingogram will aid in the diagnosis of possible abnormalities missed on insufflation, and culdoscopy will further clarify and assist in defining them. Of these three procedures, only the last requires hospitalization.

THE PELVIS AND THE ENDOCRINE FACTORS

The pelvic examination is the single most important procedure in an evaluation of the uterine factor (Table 5). Sounding of the uterus also is valuable. Hysterosalpingography and endometrial biopsy are important aids. As previously mentioned, culdoscopy may also be indicated in selected patients.

TABLE 5

UTERINE FACTOR

Pelvic examination—sound uterus.
Endometrial biopsy.
Hysterosalpinogram.
Culdoscopy.
Pneumoperitoneum.

Evaluation of the endocrine factors which might influence the patient's fertility potential sometimes requires skull films, for the evaluation of the sella turcica; measurements of 17-ketosteroid and 17-hydroxysteroid excretion; and an assay of pituitary gonadotropin. These studies will be indicated in a relatively small number of selected cases.

TABLE 6

ENDOCRINE FACTORS

17 ketosteroid excretion.
17 hydroxysteroid excretion.
Gonadotropin studies.
Skull films.

CONCLUSION

The above-mentioned procedures constitute an adequate basic investigation of female infertility. A group of tests have been proposed, many of which are designed to evaluate the same factor. Procedures should be selected to evaluate the general health, ovarian function, tubal adequacy, uterine factor, and where indicated, endocrine function.

An adequate infertility investigation is one that is meticulous and methodical, for in many instances this undertaking constitutes therapy in itself.

Pediatrics Short Course in Omaha

A continuing education course in Pediatrics will be offered to physicians by the University of Nebraska College of Medicine on Monday and Tuesday, April 5 and 6 at the Eppley Cancer Institute, in Omaha. The fee is to be $40.

Robert H. High, M.D., clinical professor of pediatrics at Temple University, Philadelphia, will discuss "Respiratory Problems in Early Life" and "The Newer Penicillins." Gerald C. O'Neil, M.D., associate clinical professor of pediatrics at Creighton University, Omaha, will make a presentation on "Disorders of Gamma Globulin." Francis Scott Smyth, M.D., professor of pediatrics at the University of California Medical Center, San Francisco, will discuss "Disorders of Bone Metabolism," and on the basis of his experience as coordinator of an Indonesian project, will review "Lessons From a World-Wide View of Child Nutrition."

Presentations by members of the Nebraska faculty will include "Bacterial Meningitis," "Lupus Erythematosus in Childhood," "Current Status of Measles, Polio and Mumps Vaccines," "Recent Advances in Pharmacology," "Viral Encephalitides," "Amino-acidopathies," "Hypoproteinemia," "Idiopathic Hypercalcemia," "Psychological Problems of Gastrointestinal Function" and "Problems of School Adjustment."

Psychological Aspects of Infertility

A. S. NORRIS, M.D.
Portland, Oregon

THE PHYSICIAN is often confronted with problems of infertility. Frequently a physical examination and a history will provide an explanation. Often, however, he can find "nothing wrong." At times the patient seems uncooperative during the examination or fails to follow the prescribed treatment regimen. When an organic cause is not found, or where there is difficulty with the patient, psychological factors should be considered.

The female genito-urinary tract seems particularly susceptible to the impact of stress and psychological conflict. This is the explanation for many cases of infertility. Stone and Ward, following a study of 500 cases of infertility, reported that 122 (24.4 per cent) were due to psychological causes.[4] Ford found that even in apparently organic cases, severe psychological problems existed in 10 out of 15 cases, and suggested an interaction of psychological and physical factors.[1]

Although the emotional factors involved in infertility can be very complex, there are some patterns that can be identified.

PATTERNS OF PSYCHOLOGICAL INFERTILITY

Conscious Avoidance. A woman who comes into the physician's office stating that she is infertile and that she wishes to become pregnant is sometimes quite aware that she does not want to have a baby, and has been very active in deliberately avoiding pregnancy. She has sought medical advice only because of pressure from her husband or her relatives, and because she is ashamed or afraid to admit to them that she does not wish to have a child.

You will find that she has been using contraceptives surreptitiously, or has invoked various excuses for avoiding intercourse during the fertile period. Here, an understanding of her feelings and attitudes toward pregnancy will be much more useful than an extensive physical investigation.

Unconscious Avoidance. One often sees a woman who appears most cooperative and eager to become pregnant. However, she forgets to come back for her next appointment, she accidentally breaks her thermometer, and when the optimum time arises for conception, she seems to be too tired, has a headache or happens to pick a fight with her husband. She avoids further investigation. If all else fails, she shifts from physician to physician, so that a complete investigation is never possible. She believes that she wishes to have a child, and is unaware of what she is doing to avoid it—"Things just seem to happen." The problem here is primarily one of attitude towards pregnancy, for physically she might be quite capable of having a baby, and would become pregnant if she didn't work so hard at avoiding getting together with her husband at the appropriate time.

Psychosomatic Factors. Selye has long since demonstrated the relationship between stress and disturbed endocrine function.[3] We saw examples of this in the high rate of amenorrhea in concentration camps during the war, before the effect of nutrition could have made itself felt. We also see it in student nurses going into training, who often develop amenorrhea or metrorrhagia for a few months. These factors can also be operative in infertility.

There is evidence that stress can produce spasm of the fallopian tubes and even a change in cervical secretions. Under such a condition, the woman can cooperate in every way possible, and still be infertile. She may pass the Rubin's test in the physician's office, but as intercourse is approached, her tubes may go into spasm.

Role of the Husband. There has been almost no work done on the husband's psychological problems and their relationship to infertility. But certainly many men are also ambivalent toward becoming fathers, or reject the idea, and they can use many of the mechanisms that women employ. They can develop headaches, go to bed late, and in various other ways sabotage their efforts at achieving pregnancy. At a psychosomatic level, it appears likely that stress can produce enzymatic changes in the semen, and it has been noted that although the semen count in a sample obtained by masturbation may be high, when the sample is taken from the vagina after intercourse, the sperm count may be much depressed.

CASE HISTORY

The following patient demonstrates many of the mechanisms just described. Mrs. C. E. is a young woman, 28 years of age, referred by the Department of Obstetrics and Gynecology. She and her

Dr. Norris is an associate professor of psychiatry at the University of Oregon Medical School. He held a similar post at the University of Iowa when he made this presentation at a postgraduate short course on infertility problems at Iowa City, early last year.

husband had been investigated for infertility, and no organic explanation had been found.

The patient was friendly and cooperative during the interview. She seemed to be glad to have an opportunity to talk about her problems. She stated that she was horrified by the idea of never having any children, and at times had become very depressed about it.

Though she felt that she had had a normal childhood, her parents had always had a turbulent relationship, and were then on the verge of divorce.

At 22 years of age, the patient had found herself pregnant and unmarried. That episode ended in a criminal abortion. Initially thereafter, she had felt greatly relieved, but months later the impact of what she had done "hit" her, and she had felt guilty ever since. She said, "I'm not superstitious and don't really believe in retribution, but it seems so ironic." It also seemed likely that she became pregnant a year later, when she was dating the man who was to become her husband. Her husband-to-be was very ambivalent about marriage, and told her he didn't love her. Then she had what probably was a miscarriage, and they were married two months later.

Since then, she had been unable to become pregnant, even though they "wanted a baby very much" and "tried everything." They became so concerned about whether she was ovulating at the time of intercourse that they often "went to pieces" and were unable to perform. These failures proved such a "strain" that they often avoided intercourse during a fertile period.

The patient was very unhappy with her marital relationship, and said that for this reason she had often avoided intercourse during a fertile period, feigning a headache or fatigue. Recently, because of uncertainty about the future, she had been using contraceptives.

She also insisted on using thyroid medication, contrary to the recommendation of her obstetrician. The effect of the thyroid was obvious, and she was clearly hyperthyroid.

Let me say a few words about her husband, for he may have been making his contributions to the difficulty, too. He has had difficulty with impotency and premature ejaculation. His first wife had died, and he had been told that a pregnancy had markedly hastened the course of her disease. He felt responsible for his first wife's death, and at times he refrained from intercourse at fertile times with his present wife because he was afraid that becoming pregnant would kill her too.

Although the patient was very accepting of the idea that there was a psychological factor in her infertility, she did not wish to participate in any treatment "because things are too much up in the air." She also planned to continue the thyroid medication, and declared, "Anyway, this is not a good time for me to have a baby."

We can see the ambivalence that this woman felt about having a child. She had many feelings of guilt about a previous abortion. She actually avoided intercourse in various ways, insisted on disturbing her endocrine function with thyroid medication to the point of overdose, and refused treatment when it was offered. Her husband was also laden with guilt and fear, and used his technics for avoiding pregnancy.

DIAGNOSIS

A thorough physical examination and a medical history constitute the first step. Only in this way can the physician have confidence in what he is doing, and it provides the best basis for him to establish rapport with his patient. He must keep in mind that even though physical findings are present, they do not eliminate the significance of emotional factors.

THE INTERVIEW

The interview must be carried out under reasonable conditions. One must have enough time so as not to seem brusque and hurried. One's manner should be non-judgmental and reassuring. The patient must be sure of one's interest.

Ford has provided a very useful method of inquiry.[1] First, the doctor must try to evaluate the woman's motivation:

1. Is she here because her husband demands it?
2. Is she trying to patch up a shaky marriage?
3. Is she trying to be like other women?
4. Does she want a baby so someone can love her?
5. Is she hostile towards her mother, and does she want to show her mother how to rear a child properly?

Certain questions may help one evaluate her attitudes towards pregnancy and the mother role:

1. How are you going to rear your child? Just as your mother brought you up?
2. How would you describe your husband? (This should reveal whether she has a contemptuous attitude toward him.)
3. Do you enjoy working, or would you rather keep house?
4. Do you want a boy or a girl? (For a first child, most women deep down would rather have a girl whom they can dress daintily and who can follow in their footsteps. A woman who deeply wants a boy suggests that she rejects the concept that the feminine role is a worthwhile one.)
5. What is your sexual adjustment? (A woman who rejects sexuality and who is frigid is unlikely to have a strong maternal instinct.)
6. How many children do you want? (Most women want two or more. If a woman says she wants only one child, the physician must suspect that she is just out to prove to herself and to others that she is a woman and can have a baby.)

Although these questions don't cover all of the problems, they usually will provide useful leads.

One should be alert for psychological factors whenever he is confronted by infertile women of certain personality types. One particular sort is

especially frequent. Such a woman tends to be small in stature and immature for her age. She is shy and dependent upon others, and gives a picture of helplessness. She seems rather overwhelmed by life in general, and seems constantly to be in emergency situations. Further inquiry will often show that she is frigid. She doesn't accept responsibility well, and fears an adult female role and the responsibilities of motherhood.

Much less common, but equally striking, is the masculine, competitive and aggressive woman who is very busy with social activities—clubs and so forth—or who has her own career. It is clear that the role which she has carved out for herself in life, and which she enjoys, is not very compatible with her becoming a mother.

TREATMENT

Before considering treatment, one should be careful to ascertain whether the woman actually should have a baby. Many symptoms of emotional origin have purposes. Infertility can represent a defense against the stress of pregnancy and motherhood. If there is doubt about the patient's motivations for having a child, these should be clarified and corrected before pregnancy occurs. If pregnancy occurs in spite of these attitudes, the consequences often will be a turbulent pregnancy, an unhappy mother and a neurotic child.

Psychotherapy. Most patients with sterility of psychological origin will become pregnant within a year following nothing more than minimal psychotherapeutic efforts. A great deal of reassurance can be conveyed through a medical investigation and a feeling of confidence on the part of the physician. The patient feels that someone is going to care for her and help her with her problem in a definite, concrete way.

Infertility patients have many misconceptions about the process of becoming pregnant, and about pregnancy itself. Some believe that it is possible for a woman to become pregnant only by having an orgasm, and are surprised to find they can become pregnant without one. Many women have unjustified fears about the processes and dangers of pregnancy itself. Simple explanations of the anatomy and physiology of conception and pregnancy will be of help to many patients.

A few will require counseling consisting of advice or some adjustment of the relationship between wife and husband. The patient may require an opportunity to ventilate and discuss her ambivalent feelings about having children. All women have some negative feelings in this regard, and they need reassurance.

Sedation. This type of medication may be particularly effective in women who are too anxious or too frightened to become pregnant. They become tense and upset, and their very eagerness can confound their efforts. Phenobarbital or mild tranquilizers will be useful. These can do more than just quiet the patient's emotions. In spasm of the fallopian tubes, the tranquilizers can be more effective than anti-spasmodic drugs.

In a year, if the patient is not pregnant and if no organic findings are present—and occasionally, even if they are—intensive psychotherapy should be considered. Even in these difficult cases, the results of formal psychotherapy are quite good. Rubinstein reports success in four out of five cases with one year's insight psychotherapy.[2]

SUMMARY

The study of the infertile woman is not complete unless one takes into account the role that psychological stress or distorted attitudes may be playing. When emotional problems do exist, they can be handled, for the most part, by the physician who has been caring for the patient's physical ills. He needs only to recognize the possibility that emotional factors are involved, and to make an effort to help her overcome them. Only the most difficult cases require referral to a psychiatrist.

REFERENCES

1. Ford, E. S. C., *et al.*: A psychodynamic approach to study of infertility. Fertil. and Steril. **4**:456-465, 1953.
2. Rubenstein, B. B.: Emotional factor in infertility; psychosomatic approach. Fertil. and Steril. **2**:80-86, (Jan.) 1951.
3. Selye, H.: Alarm reaction and diseases of adaptation, Ann. Int. Med. **29**:403-415, (Sept.) 1948.
4. Stone, A. and Ward, M. E.: Factors responsible for pregnancy in 500 infertility cases. Fertil. and Steril. **7**:1-14, 1956.

Standard Nomenclature for Sports Injuries

To gain a more accurate picture of the natures, rates and causes of sports injuries, so that effective preventive measures can be determined, the development of a standard nomenclature of sports injuries has been undertaken by the AMA. A Subcommittee on Classification of Sports Injuries has been appointed for this purpose. Available statistics don't necessarily depict valid information, since injuries in athletic settings generally haven't been classified in a uniformly-understood manner.

Training-room terms such as "charley horse" and "hip pointer" will not be discarded, but will be related to, and will serve as synonyms for, medical entities. Terms such as "shin splints" and "concussion" which are not definitive will receive special attention.

The information will be classified by anatomical region, pathology and degree of severity, and will be coded for precise and nationally uniform reporting and analysis.

The first progress report will be issued in April. The Subcommittee includes Alexius Rachun, M.D., Ithaca, New York, chairman; Fred L. Allman, Jr., M.D., Atlanta; Martin E. Blazina, M.D., Los Angeles; Donald L. Cooper, M.D., Stillwater, Oklahoma; and Richard C. Schneider, M.D., Ann Arbor, Michigan.

Male Infertility

R. G. BUNGE, M.D.
Iowa City

Two decades ago a barren marriage was considered to be the fault of the woman. However, since that time a good many otherwise healthy young males have been found to have faulty fertility potentials. This still remains as one of the perplexing problems in male reproductive physiology, and the therapeutic armamentarium is as varied as the lesions found. These lesions may vary from germinal cell aplasia to the presence of a normal testis and congenital absence of the ductus deferens. Evaluation of male fertility potential demands a thorough and extensive investigation in the greatest possible depth.

THE HISTORY

Queries (Table 1) should be made as to the possibility of radiation exposure, whether undescended testes have been present, what was the pattern of maturation, surgery of the groin and genital areas, whether any infections, particularly mumps orchitis or gonorrhea have been present, whether the patient may have had a recent high fever, and most importantly, whether any therapy has been completed in the recent past. For example, a patient presented himself with aspermia, and his history included the item that during the past four months he had been receiving testosterone intramuscularly every two weeks, resulting in a complete suppression of spermatogenesis. In subsequent months the semenograph showed remarkable improvement without any therapy.

TABLE 1

HISTORY

Past—irradiation exposure, undescended testes, maturation, trauma, surgery, infection and recent fever, and previous therapy.
Present—occupation, duration of marriage, previous pregnancies, sex habits, lubricants, timing.

The present history should include the occupation of the patient, inimical jobs being those pursuits which sometimes include exposure to toxic materials or irradiation; how long the patient has been married; whether any previous pregnancies have been established; the nature of the coital habits; whether lubricants have been used; and particularly, the timing of sexual intercourse. It is fallacious to assume that all individuals have normal sexual habits and all too often the physician, with unbecoming modesty, fails to make a detailed inquiry.

THE PHYSICAL EXAMINATION

A complete physical examination (Table 2) should be conducted, and special attention should be given to the presence of endocrine stigmata such as fur-cap hairline, gynecomastia, the female type of pubic hair distribution, lack of beard, *et cetera*. Detailed examination of the genitalia is conducted with particular reference to the urinary meatus, the presence of scars and strictures, hypospadias, the ductus deferens, and particularly the size, position, and consistency of the testes. In the rectal examination the physician should note the condition of the prostatic gland and seminal vesicles.

TABLE 2

PHYSICAL EXAMINATION

Endocrine stigmata
Genitalia: urinary meatus, hypospadias, ductus deferens, testes
Prostatic gland and seminal vesicles

LABORATORY TESTS

Laboratory procedures (Table 3) include a routine urinalysis and an assay of a 24-hour urine sample for 17-ketosteroids and gonadotrophin excretion, if the patient has a lowered fertility potential. Other laboratory procedures which may be

TABLE 3

LABORATORY PROCEDURES

Urine: routine
24 hour: 17 ketosteroids, gonadotrophins
Semen analysis
Others as indicated.

Dr. Bunge is a professor of urology at the U. of I. College of Medicine, and he made this presentation at a postgraduate short course on infertility in Iowa City, early in 1964.

TABLE 4

SEMEN ANALYSIS
DEPT. OF UROLOGY

PATIENT: ..... AGE: ..... HOSPITAL NO. .....

DATE	DAYS OF CONTINENCE	VOL. CC.	LIQUEFAC.	COUNT M/cc	% VIABIL.	Ab. FORMS	ACTIVITY	ADDED OBSERVATIONS

The U. of I. Hospitals semenograph. The duration of continence, in days, is recorded. The normal volume ranges from 2-4 ml. Liquefaction should take place in 20-30 minutes. The lower boundary of the normal range for numbers of spermatozoa per ml. is considered to be 20 million. Normal viability ranges from 60 to 85 per cent. Abnormal forms range from 20 to 25 per cent. Four levels of activity are recorded: absent, poor, fair, good.

indicated in subfertility are protein-bound iodine, basal metabolic rate and iodine-uptake studies. From my experience, I believe that dysfunction of the thyroid gland in male infertility is a rarity, and an investigation of this possibility need not be undertaken unless there is definite clinical evidence for such dysfunction.

All patients are requested to submit a minimum of three ejaculates, preceded by three to five days of continence. The flow sheet shown on Table 4 records the days of continence, the volume, whether liquefaction occurred within the predicted normal of 20 to 30 minutes, the number of spermatozoa per milliliter, the number of living forms, the number of abnormal forms and the type of activity present. The number of living forms is evaluated by the eosin, nigrosin stain, which is based on the old observation that eosin will stain dead tissue. A drop of semen is placed on a slide, a small quantity of 5 per cent eosin is mixed with it, and then a small quantity of 10 per cent nigrosin is added as a background stain. The drop is then smeared out on the slide and gently heated over the alcohol lamp. When examined under a microscope, the forms which were living at the time of heat fixation will be unstained, and those that were already dead will have taken up the eosin stain. By counting 100 spermatozoa, the exact number of living forms can be determined. The same slide is used to determine the number of abnormal forms present.

In evaluating the semenogram, one must take into account all factors recorded. For example, the patient may present normal volume, high count, high viability percentage, low abnormal forms and good activity, but liquefaction may be absent. Also, one may find a patient with a normal volume, normal liquefaction, high count, high viability count, but a high percentage of abnormal forms. This would indicate a decreased fertility potential because it is known that such spermatozoa are incapable of fertilizing ova. Again, one may examine a series of semenographs and find that all of the observations are well within the normal range except that of viability, and here again the viability, if only 10 to 20 per cent, reveals a subfertility potential.

It cannot be overemphasized that the whole semenograph must be examined if the evaluation is to be accurate. Normal ranges for volumetric determinations are 2 to 4 ml. (If a sample held in an eye dropper does not fall in discrete drops after exposure to room environmental gradients for 20 to 30 minutes, non-liquefaction is judged to be present.) For the present, 20 million spermatozoa per milliliter is considered the lower limit of the normal range. Viability varies from 60 to 85 per cent, and abnormal forms vary from 20 to 25 per cent. Activity is judged on the basis of four qualifying levels: absent, poor, fair, and good.

THE TESTICULAR BIOPSY

In those patients whose semenographs indicate a poor production of spermatozoa, testicular biopsy is recommended. This is performed under a short-acting general anesthesia, and an incision is made through the skin and subcutaneous tissues and through the tunica albuginea of the testis. The tunica is opened, and a generous piece of testicular material is removed. An excellent fixative for the material is Bouin's solution. Formulin solution is an inappropriate fixative, for it produces such a distorted image of the tissue that proper interpretation cannot be made (Fig. 1).

Interpretation of the testicular biopsy would constitute another assay, but in essence, many therapeutic leads can be found. If the interpretation of the biopsy suggests sloughing and disorganization, the patient will respond best to testosterone-suppression therapy. Others may have such poor prognoses that any type of therapy would be useless. It has been my experience that patients are indeed grateful for a final answer to their problem and although initially they are somewhat dismayed, they are able to face reality and solve their infertility problem in other ways.

THERAPIES

Some practical therapeutic methods will now be discussed and we shall begin with the situation in which both man and wife are considered to be normal. In consultation with the gynecologist, one predicts the date of ovulation by means of temperature charts and cervical mucus, and the couple are instructed to have intercourse in the morning of that particular day, and again six to eight hours later. This procedure tends to increase the number of spermatozoa present during the proper period, even though the second ejaculation contains, perhaps, only 10 to 15 million spermatozoa per ml. In other situations, the semen sample can be placed in a cervical cap on the day of ovulation, thus insuring the close proximity of the spermatozoa to the cervical os. In still other groups of patients, we have frozen the semen from the husband and inseminated the wife on the day before, the day of, and the day after ovulation. In essence, the freezing process consists of the addition of one drop of glycerol to nine drops of semen, and freezing the material in a mechanical refrigerator running at -85 degrees C. The thawing process is a simple one, and is conducted in a water bath at approximately 38 degrees C. This has been successfully employed in several instances, and all of the offspring have been normal.

The Problem of a Large Volume of Seminal Plasma—The need for a concentrated sample for the gynecologist to use in inseminating the wife is quite obvious. Several methods are available, and of them all, I prefer the split ejaculate. It is well known that the first portion of the ejaculate contains most of the spermatozoa and if the husband partitions the ejaculate, a concentrated sample can be obtained. Another method is the centrifugation of the entire ejaculate at high speeds for five to seven minutes. The supernatant fluid can be poured off and the concentrated sample pipetted from the bottom of the tube. Another possible method of concentration consists simply of putting the ejaculate in a test tube and storing it in an ordinary refrigerator at around 40°F. In the cooler temperature, motility ceases and the spermatozoa tend to drop to the bottom of the vessel. After two to three hours of storage under these conditions, decantation of the supernatant fluid will leave a higher concentration of spermatozoa in the test tube. At the present time, our laboratory is conducting a number of observations intended to determine whether the combination of a reduction in environmental temperature plus centrifugation may produce a higher concentration.

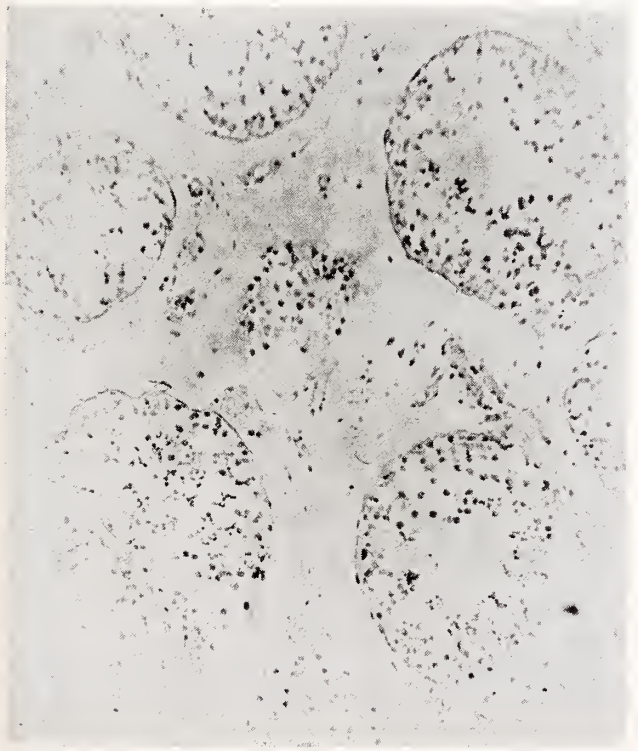


Figure 1. Photomicrograph of testicular architecture produced by formalin fixation. There is distortion of such an order that proper interpretation is nearly impossible. A suitable fixative is Bouin's solution.

Nonliquefaction of Semen—If nonliquefaction is a persistent observation and the semenograph and all other elements are considered within normal range, the following procedure may solve the problem. Following intercourse on the day of ovulation, the wife introduces 1 cc. of 5 per cent alpha amylase into the vagina and keeps her hips elevated for 40 minutes. The Asepto Syringe No. 2045 is acceptable for the insertion of the material. As a vehicle for the 5 per cent amylase solution, one should use a balanced type of salt solution rather than ordinary saline. An interesting sidelight to this procedure has been the failure of pregnancy to follow the placing of liquefied semen in a cervical cap. Some 12 pregnancies have been now established in patients whose husbands presented nonliquefaction as a consistent feature of their semenograph and where the marriage has remained barren for several years. There is some indication that the liquefaction of the semen has been helpful in establishing a pregnancy.

Surgical Therapy—Epididymovasostomy may be indicated in patients with aspermia. The problem is to determine whether the Ford factory in River Rouge, Michigan, is making Fords, or whether the delivery system to What Cheer, Iowa, has broken down. The first step is a testicular biopsy, and if the testis is found to be normal, one may make the assumption that a block is present in the delivery system. If it were an easy matter to determine the site of the block, a better selection could be made of candidates for epididymovasostomy. However, the plain fact remains that one must determine at the operating table whether such a procedure is feasible. The recovery of spermatozoa from the incised epididymis will indicate that a successful anastomosis can be performed, provided that the ductus deferens is not blocked. One can answer the

latter question by injecting a small amount of dye (liquid) into the duct and ascertaining whether it can be recovered by irrigating the bladder through an indwelling urethral catheter. If the duct is proved to be patent, then a side-to-side anastomosis is made with #00000 chromic catgut sutures, under either microscopic or loop control. In our present series of operations, a splint is not applied. There should be an extended period of observation following the procedure, and the semen should be examined at least once a month for a year. At least a year must elapse before the procedure is considered a failure.

Reestablishment of the ductus deferens following vasectomy is attempted in those patients who have had high ligation and in whom two patent portions of the duct can be demonstrated. The same type of sutures are used to re-anastomose the ductus deferens, and the small polyethylene splint is left in place for fourteen days. It is remarkable that after prolonged periods of ductus deferens blockage, the testis can produce spermatozoa and re-establish the fertility potential of such patients.

Some Observations on Drug Therapy—Evaluation of drug therapy must be based on two observations: 1) that the spermatozoa take two to three weeks to pass from the seminiferous tubules to the ampulla, and 2) that in a large series of cases, sixteen per cent of the wives are going to become pregnant no matter what therapy one employs. This last observation probably accounts for the extensive use of thyroid medication many years ago. The success of any one clinician is going to be somewhat dependent upon how varied his therapeutic approach appears to be. The indiscriminate use of testosterone-suppression therapy is to be condemned. It is recommended only in those cases showing sloughing and disorganization in the testis. Cytomel has been used, and several clinicians have reported remarkable success with this drug. The response of my patients has been erratic and unpredictable. In some patients, it has been found that 0.1 mg. of stilbestrol given twice a day for six weeks will produce an elevation in the number of spermatozoa, but the problem of predicting which patient will respond remains unsolved. It has been observed in our laboratory that those patients who do respond have a rather marked elevation in the L.H. gonadotrophin assays. Several explanations for this phenomenon have been offered, but they cannot be included in this essay. A modicum of success has been obtained in a series of patients who presented elevated gonadotrophins in the urinary assay and whose biopsy samples presented a picture of spermatogenic arrest and hyperplasia of the interstitial cells. Reduced doses of depot-type testosterone, in the range of 100 mg. four times every two weeks, resulted in an increase in the number of spermatozoa present in the ejaculate, and a decrease in the level of gonadotrophin activity.

Negative Results—There is some favorable comment in the literature on the removal of varicoceles with subsequent improvement in fertility potential. This is attributed to a more favorable intrascrotal environmental temperature following varicocelectomy. There have been three notable failures in my own series, without improvement in the semenograph. Contrariwise, I might mention that after an infertility lecture two medical students reported that they were considerably concerned about their own fertility potential, since they had varicoceles. Both individuals presented above average semenographs.

A mono-amine oxidate inhibitor given to a group of 40 patients failed to produce any significant changes in the semenographs over a six- to nine-week period.

Three patients with spermatogenic arrest and no urinary gonadotrophin after repeated assays, were given human chorionic gonadotrophin. Instead of improving the level of sperm production, it reduced all three patients to aspermia. Then they gradually returned to their pre-treatment levels.

CONCLUSION

Male infertility still remains as one of the most perplexing mysteries in medicine, and demands further investigation.

Fifth Institute on Preventive Psychiatry

The role of the school and of community treatment facilities in preventing mental illness and promoting mental health will be the subject of the Fifth Institute on Preventive Psychiatry, at the University of Iowa, May 14 and 15. One of its aims will be to clear up some of the confusion that has existed concerning the role of the classroom teacher in the mental health of children. Professor R. H. Ojemann, of the U. of I. Institute of Child Behavior and Development, and chairman of the Preventive Psychiatry Committee, says, "In years past, some educators suggested that the classroom teacher has little or no part to play in mental health."

Dr. Harry R. Brickman, director of mental health for Los Angeles County, will discuss "Maintaining Constructive Community Relationships During and Following Treatment." Mrs. Elizabeth B. Lindemann, of Wellesley Hills, Massachusetts, will talk on "Strengthening the Relation Between School and Community Treatment Facility." Professor Mary Alice White, of Columbia University Teachers' College, will speak on "The Role of Specialized School Personnel in a Comprehensive Plan for Prevention." And Mr. Roger Cartwright, of the Bank Street College of Education, New York City, will discuss "The Role of the Classroom Teacher in a Comprehensive Plan for Prevention."

Clinical Impressions of External Otitis

EPHRAIM L. MANNING, M.D.
Davenport

It seems that the men who write scientific reports and append extensive tables to them aren't the ones who see most of the cases of external otitis. I have seen one report on a series of 36 cases, but the way seems clear for me to describe my experiences with the disease, and to present a type of treatment that I have used with considerable success.

The treatment of otitis media appears to have been more of a problem for the authors of the published articles than it has been for me. First, however, the diagnosis should be discussed. The type of patient referred to here is one with a painful ear, and with swelling in and about the ear canal. Such a patient is very easily recognizable. He walks in holding his head stiff or to one side, and very often holding his hand over one ear. The tension in the patient's neck reflects his fear that movement of the head will produce pain, and one can suppose that he holds his hand to his ear because the ear feels better if it is kept warm and protected from drafts. An affirmative answer to the question, "Does the ear hurt when you open your mouth?" makes the diagnosis more certain. I usually explain to the patient that any movement of the swollen canal, such as might be produced by pressing a finger against the ear, or by opening the mouth and thus causing the mandible to impinge upon the canal, causes pain. This symptom has caused physicians mistakenly to get x-rays of the temporomandibular joints in such patients.

Most of the cases seem to occur in hot weather—especially if the temperature has risen to 90° F. or above. Usually the patients say that they have been swimming. The difficulty is external otitis if pain is produced by applying pressure on the ear about the entrance to the canal, or by pulling on the auricle or pressing upward from behind and below the auricle. The canal usually appears swollen shut.

If one persists in trying to clean out the canal immediately, the patient may cry out or scream. If the patient is a child, he will run away if not held down, and the physician can lose the patient and his family in this way. At one time, I packed these swollen ear canals with gauze wet with Burow's solution, instructed the patient to keep the gauze moist with the same solution, and told him to use heat on the ear for two days. That regimen helped, but the packing procedure usually was painful, and the next time the condition occurred, the patient looked for another physician.

About seven years ago, I started giving these patients steroids by mouth—at first very cautiously, for I had been warned against such measures. My prescription was usually for dexamethesone, 0.75 mg. t.i.d. for three days, or possibly a larger first dose and 0.75 mg. doses thereafter. For a child, the doses were half as large.

I was careful to ask whether the patient had ever had stomach ulcers, and where appropriate, whether the patient were pregnant. When the answer was "Yes," I didn't use it. I was also careful to tell the patients who were to receive dexamethasone that if they ever afterward has occasion to undergo surgery, they should be sure to tell the surgeon that they had once taken a steroid. The effect of the steroid on tuberculosis was also considered. Incidentally, since starting to ask patients about ulcers, I have been surprised at how frequently an external otitis patient—especially a woman—is an ulcer victim. It may be that the emotional make-up of these people is such that they acquire both maladies. Perhaps ulcer patients' ears itch and are scratched more than other people's.

In addition to the oral steroid, I have usually used ear drops which contain hydrocortisone and are antibacterial. During the past few years, I have used Vo Sol Otic with hydrocortisone, mainly because it has no antibiotic in it, and because it comes in a 10 cc. rather than in a 5 cc. bottle. A number of patients were allergic to the neomycin that most of the other ear drops contain.

The patient is told that the drops won't enter the ear at first, because of the swelling in the canal, but that they will go in after about two days, when the swelling has decreased. If it is suspected that the patient has a middle-ear infection or a pharyngitis in addition to the external otitis, a long-acting sulfa drug or an oral antibiotic is also prescribed.

Unless the ear is cleaned out about once a week, when the patient is using ear drops, a cake of powdery material may accumulate, and this may be very difficult to extricate. Creams and ointments can also fill up the canal. When the physician sees the patient after a week, the swelling is

Dr. Manning is a private practitioner of otolaryngology.

usually gone, and he can clean the ear without any discomfort to the patient.

ETIOLOGY

Very often, one sees that the canal is narrow or flattened near its external opening, or that a fold has flattened the opening. The shape of the canal is such that any water that has entered the ear while the patient was swimming has been held by capillarity in the slit-like opening. The water then has mixed with cerumen, and a good culture medium for bacteria has been formed in the warm canal, and an infection has resulted. One doesn't find cerumen in all patients, but in most of them there is a flattened canal that is capable of retaining moisture.

The patient or the patient's parents usually want to know what went wrong, and a drawing of the ear and the external canal will help the physician explain the mechanism that produced the condition.

Patients often try to blame a particular swimming pool or other body of water, but I usually tell them that even if they dropped sterile water into the ear and allowed it to remain there and to mix with cerumen, the bacteria normally present on the skin would multiply in it. Thus, the problem has resulted from the introduction of water into the warm canal, and leaving it there, rather than from the type of water that has been introduced. Even in cool weather, swimming can start this chain of events, and I warn patients that continuing with swimming lessons or continuing as a member of a swimming team at school could cause recurrences of their ear trouble.

VARIANTS

Occasionally one sees a patient with no swelling in the canal, but with some tenderness. The patient feels pain when pressure is applied externally and when he opens his mouth. This, too, is an external otitis. Pain in the ear, despite normal-appearing drums and an absence of tenderness, is very often due to inflammation in the nasopharynx. These patients usually complain of post-nasal discharge. The pain usually disappears when they begin taking an antihistamine decongestant and sulfa or antibiotics, and they are asked to try the antihistamine again whenever the symptoms recur. The pain can also originate in the larynx, and that area as well as the nasopharynx should be inspected. Sulfa and antibiotics have been frowned upon, too, but undeniably they provide relief to these patients.

Occasionally a patient with a swollen ear canal gives a history of a chronically draining ear. Steroid treatment for three days has caused the pain and swelling to disappear, usually within a day or two, and has produced no bad effects. In these cases I have used antibiotics and have continued the treatment of the chronically draining ear after the swelling has gone.

Sometimes, after the swelling has been reduced, one sees the characteristic blotting-paper material of a fungus infection. This is difficult to remove painlessly unless one irrigates it with water. Despite the knowledge that moisture contributed to the growth of the mold in the first place, I use water for this purpose, but then dry the ear and use an anti-fungal ear-drop such as otobione. The ear is usually normal when I next see the patient, after one week. A large proportion of patients say they have been told that they have a fungus infection, but in our experience no more than about one in 50 patients with external otitis have mold infections.

Patients often ask whether they may wash their hair. The amount of moisture that gets into the ear during that process doesn't seem to have any bad effect. The slight danger that hair-washing occasions can be avoided by directing the patient to put cotton in the ear, but one should make clear that it should be a large piece, and that it should be placed at the entrance to the canal rather than within it. Frequently, an otologist finds a small piece of cotton within the canal or up against the drum—one that may have been inserted months or years before. In one patient whom I had given a steroid to reduce swelling of the canal, I found a piece of cotton after the swelling had subsided. Hair can hold cerumen and moisture in the ear canal.

In about one out of 75 cases of painful external otitis, the steroid regimen fails to work. In most of these recalcitrant cases, the swelling eventually localizes and forms a furuncle. Treatment then consists of waiting and using heat. If patients complain of severe pain despite medication to relieve it, local x-ray can be used effectively.

Itching is a symptom of allergy. Most physicians feel helpless to control this, and succeed only in giving the patient temporary relief. It is easy to blame the patient—to call the ailment neurodermatitis and to classify the patient as emotionally unstable. However the itching will outlast the medication, and these patients do suffer. If the patient scratches the ear, it will become inflamed and painful, off and on. For the permanent relief of this difficulty, I haven't much to offer. I usually give the patient a prescription for a half-ounce of 5 per cent Cort-dome cream (hydrocortisone-acetic acid ointment), and let the pharmacist refill it once. After about a year has elapsed, and when the patient asks for a second refill, he can be told that the ear may be filled with cream, and should be cleaned out and checked.

The patient is told that there is a possibility he has an allergy to such foods as chocolate and nuts, and that he should note whether or not his pruritis increases after he eats them. I haven't undertaken any other type of allergy management because my patients haven't thought their discomfort was severe enough to justify other measures. Dermatitis behind the ear frequently is due to hair dye. One often sees the tell-tale staining from the dye.

Even though I know that findings would be reliable only if the instrument were used in a sound-proofed room, I keep an audiometer next

to the examining chair, and take an audiogram on each ENT patient, except when the procedure might occasion considerable pain. The patient with external otitis may also have a middle-ear infection, and it is extremely interesting to follow the course of a middle-ear infection by this means. Without an audiogram one may feel that he has the infection under control and that there is nothing else for him to do. In reality, however, there may be a hearing loss that treatment might reduce.

If the taking of an audiogram required moving the patient to a sound-proofed room, it might be neglected in many cases. Taking one in the regular examining room requires just five minutes, and rather than recording it on a separate chart, one can use two lines of the ordinary record card. The numbers 12, 20, 20, 10, 55, 30, 25, 40 represent decibel losses at frequencies starting at 256 and going up to 11,584. A loss in some tones could indicate the presence of fluid about the round window.

A REVIEW OF CASES SEEN DURING SEVERAL MONTHS

Starting on July 1, 1963, after a week of over 90° weather, I recorded the number of patients with painful external otitis whom I saw in my office. The swimming pools in town had then been open for about three weeks, and cases had started coming in. On July 1, I saw six. During the following whole month, there were 52. In August, there were 34, and in September, 30. Later, there were far fewer, and when cooler weather started there were only about five cases per month. It seemed that sweating, during the hot weather, could have produced the warm, moist environment for bacterial growth in cerumen, but a bigger role probably was played by the swimming that my patients had done during the hot weather.

Practically all of these patients came in with canals swollen shut and with severe pain. Most of them stated that the pain subsided promptly—almost with the first dose of steroid. A majority said the pain was gone in one day, and the rest, in two days. Most gave histories of having gone swimming a few days before their difficulties began.

Along with therapy for external otitis, these people were treated for other conditions peculiar to the summertime. These included perforation of the drum from diving, allergic rhinitis with pharyngitis, and middle-ear infections. One must be aware that people often complain only of pain in their eyes or a sense of pressure in the eyes, when the principal malady may be an allergic rhinitis and sinusitis that often can be relieved by an antihistamine-decongestant. Contact-lens wearers often are unable to tolerate their lenses during the season when they have a mild allergic conjunctivitis.

Some patients came in with edema of the uvula and various parts of the larynx, and narrowing of the airway as a result. At least two such patients had occlusion of the airway when they lay supine, but had a free airway when they sat up and the uvula flapped out of the way. Steroids corrected such conditions, and in at least two instances eliminated the need for a tracheotomy. It is remarkable how soon steroids will make a ballooned larynx return to normal.

A few of the patients showed purulent otitis—usually chronic, if one could judge from the history—when the swelling in the ear canal had been corrected. In those cases it was felt that bathing the ear canal with infected material had produced the infection there. The treatment of the middle-ear infection continued after the acute external otitis let up. A few days on steroids didn't seem to have affected the middle-ear condition adversely.

The steroids helped the chronic dermatitis that some of the patients had about the auricle, and Cort-dome cream and packs moistened with Burow's solution were used on the weeping surfaces. Many of the summer patients gave familial histories of hay fever and asthma, and said they had been treated by allergists. Some patients complained of vertigo—probably labyrinthine—and this too was felt frequently to be allergic.

Hearing-aid receivers in the ear—especially a draining ear—and ear-plug radio receivers had helped to produce a number of cases. Some had occurred after cerumen had been removed and the ear canal scraped.

I have no good suggestions to offer as regards ways in which swimmers can ward off external otitis. It is my feeling that ear plugs keep out water but also irritate the ear. A hearing-aid mold seemed a good idea, but very few swimmers would have them made. A wax-impregnated cotton is available in Europe, but pieces of cotton can block the filter systems that are used in pools, and as a result the managers frown upon their use.

One of the sequels of my using oral steroids was that patients who had recurrences and had moved away, in the meantime, wrote to me and asked to be treated by mail. One man phoned a few times from a town 1,000 miles away.

ADDENDUM

Since I prepared the above paper, another summer has come and gone. It started with two weeks of over-90° temperatures, and I saw six to 12 patients per day with swollen ear canals. Cool days brought a definite decrease in their numbers.

My few failures were with patients on whom I used steroids other than dexamethesone, but perhaps I merely hadn't found the correct dosages. It also became apparent that the steroid possibly should be used for a slightly longer period and in slightly larger doses than had been my custom, but not for more than one week.

I also used steroids in polyps of the vocal cords, glossitis, some types of pharyngitis and aphthous ulcers, and Ménière's disease.

As regards external otitis and associated conditions, my experience during the summer of 1964 convinced me that I have no need to apologize for using steroids in the pattern that has been described here.

University of Iowa
College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 66-YEAR-OLD MARRIED WHITE FARMER was admitted to the University Hospitals with complaints of daily nausea, intermittent vomiting and weight loss. For three years he had noted precordial chest pain on exertion, but it had been relieved by rest. Eleven months previous to his admission, he had been hospitalized for two weeks because of persistent, severe left-sided chest pain which had been present for three days. At home, one week later, he had noted the onset of orthopnea and nausea, and was digitalized. Thereafter he had experienced almost daily nausea and occasional vomiting. He had lost 43 lbs. in 11 months, and felt that his stomach filled rapidly during meals. Occasionally, baking soda gave him some relief from dull epigastric ache and eructations. He had been constipated for years, and used mineral oil two or three times weekly. The stools were light colored, and no melena had been noted. He denied alcoholic intake of more than one beer and one shot of whiskey daily. Medications on admission were digitoxin, chlorothiazide (Diuril), potassium iodide and nitroglycerine.

Physical examination revealed a well-developed white male with a blood pressure of 140/100 mm. Hg, and a pulse rate of 88/min. Telangiectatic vessels were present on the face. The lungs were clear to auscultation and percussion. No cardiac murmurs were heard. The left border of cardiac dullness was 12 cm. to the left of the midsternal line in the fifth intercostal space. P2 was greater than A2. The abdomen was distended and had a fluid wave with shifting dullness. The liver edge was tender, sharp and palpable two fingerbreadths below the right costal margin. The hepatojugular reflux was negative and the neck veins were distended at 45°. A right hydrocele was present. No pedal edema was noted. Urinalysis revealed 1+ proteinuria, a specific gravity of 1.010, a pH of 5, 2 to 4 white blood cells per high-power field, and no glycosuria. Chemical tests of urine and stool for blood were negative. The hemoglobin was 13.4 Gm./100 ml., the hematocrit was 45 per cent, and the white blood cell count was 8,950/cu. mm., with a normal peripheral differential count. The erythrocyte sedimentation rate was 30 mm./hr. (Westergren). A serologic test for lues was negative. The blood urea nitrogen was 35 to 50 mg. per cent, the creatinine was 1.9 to 3.4 mg. per cent, the serum albumin was 4.1 Gm. per cent, and the serum globulin 4.4 Gm. per cent. The acid phosphatase was normal. A bromsulphthalein test was 40 per cent, and the alkaline phosphatase was 2.7 units. The bilirubin was 0.7 mg. per cent at one minute and 1.9 mg. per cent total. Thymol turbidity and serum transaminase were normal.

A paracentesis was done, and 2,100 ml. of cloudy, yellow fluid was removed. The ascitic fluid had a specific gravity of 1.015, and contained 500 cells/cu. mm., and 3.1 Gm. per cent of protein. On smear it was negative acid-fast, and it was negative on culture and guinea-pig inoculation for acid-fast bacilli. Cell block of ascitic fluid was negative for malignant cells.

An EKG showed old lateral myocardial infarction and first degree AV block. An intravenous urogram showed prompt bilateral function, but the kidney outlines were indeterminate. The chest roentgenogram showed cardiomegaly. The lung fields were clear, and no pleural effusion was noted. The upper gastrointestinal series was interpreted as normal. A barium enema revealed diverticula of the sigmoid and descending colon. Sigmoidoscopy was normal. The nausea disappeared after digitoxin had been discontinued for five days. The appetite improved. The patient was discharged to maintain a 1,500 mg. sodium diet and to continue digitoxin, Diuril and potassium triplex.

Although scheduled to return in one month for a liver biopsy, the patient didn't return until three months later. He had taken his medications until approximately two weeks before his second admission. Abdominal distention, edema of the hands, pedal and scrotal edema, and dyspnea had then developed. Four days before admission his physician had removed two quarts of ascitic fluid by paracentesis. Nausea and vomiting had recurred, and he felt very weak. He had lost 10 lbs. during the previous three months, and his appetite was poor. He had a mild cough, productive of clear sputum.

Physical examination revealed a blood pressure of 110/80 mm. Hg and a pulse rate of 100/min. His

temperature was 102° F. The sclerae were slightly icteric. Dullness to percussion and absence of breath sounds were noted at the right lung base. A few rales were audible at the left lung base. The apex beat was palpable in the anterior axillary line in the fifth intercostal space. A protodiastolic gallop was audible, as was a Grade II systolic murmur at the cardiac apex. The abdomen was distended, and a fluid wave was present. Pedal edema was 1+. The sensorium was slightly dulled. The hemoglobin was 12.9 Gm. per cent, and the hematocrit 40 per cent. The erythrocyte sedimentation rate was 82. The white blood cell count was 15,200/cu. mm., with 3 per cent bands, 63 per cent segmentals, 5 per cent eosinophils, 27 per cent lymphocytes and 2 per cent monocytes on peripheral smear. A stool test for blood was 1+. The urine showed first a trace and later 2+ protein. No cells or casts were seen on microscopic examination. An ictotest of urine was negative. Blood urea nitrogen on admission was 19 mg. per cent, with a creatinine of 1.5 mg. per cent. Five days later, the blood urea nitrogen was 105 mg. per cent, with a creatinine of 2.5 mg. per cent. Serum sodium was 132, potassium 4.5, chloride 88, and CO_2 26.4 mEq./L. Serum albumin was 2.6, and globulin 4.4 Gm. per cent. The cholesterol was 102 mg. per cent, the alkaline phosphatase 5.55 units, and the bilirubin 1.2 mg. per cent at one minute and 2.1 mg. per cent total. The BSP was 35 per cent, and the thymol turbidity 4.4 units. The a.m. blood sugar was 77 mg. per cent. An EKG showed little change except for a rate of 115/min.

A chest roentgenogram revealed moderate-sized pleural effusion on the right, with fluid in the oblique fissure. The pulmonary vasculature was not suggestive of congestive failure. The cardiac silhouette was enlarged. A flat roentgen of the abdomen showed some gas in the small bowel and colon. The small bowel was not greatly dilated. There was no evidence of free intraperitoneal air, or air in the biliary tract. There was a suggestion of intra-abdominal fluid.

During the first five days of hospitalization, there were daily temperature elevations from 100 to 103.6° F., rectally. Venous pressure was 16 cm. of saline, and the circulation time was 30 seconds. During this time, two attempts at paracentesis of the abdomen were made, but were relatively unsuccessful. Gram stain of the ascitic fluid did not reveal bacteria, an acid-fast smear was negative, and a cell block showed no malignant cells. The patient continued to complain of vague abdominal pain. On the fourth day of hospitalization, the abdomen was tense, and calf tenderness was noted on the right, with prominent superficial veins but negative Homan's sign. The following day the patient had profuse diaphoresis, lethargy and slight confusion. Then an upper gastrointestinal series was carried out. The radiologist reported motion of both leaves of the diaphragm, more on the left than on the right. The stomach was grossly normal, and the duodenum was indeterminate. Some small-bowel gas was noted, and there was a large amount of gas in the colon.

Late on the sixth day, the patient began vomiting, and was given intravenous fluids containing Chloromycetin. Streptomycin, 500 mg. intramuscularly every 12 hrs., was begun. On that day, the local physician called to say that he had received a report on the ascitic fluid which he had removed—that it was positive for malignant cells.

On the seventh day, nasogastric suction was begun because of repeated vomiting. The patient was more lethargic, confused and disoriented. The blood pressure was 120/70 mm. Hg, and the pulse was 110/min. The temperature was 100° F. Supine and lateral decubitus roentgens of the abdomen showed gas in the colon, with considerable free intraperitoneal air. The large amount of gas was felt to be more than is usually seen following paracentesis. Then a surgical consultant who saw the patient noted a rigid abdomen with rebound tenderness. He felt surgery was unwarranted in view of the deteriorated condition of the patient, the malignant cells that had been found in the ascitic fluid, and the azotemia. On the following day the blood pressure was 96/80 mm. Hg, and the patient was still disoriented. He was afebrile that day. On the ninth day, his temperature rose to 101.4° F., and he became hypotensive and apneic, and expired.

CLINICAL DISCUSSION

Dr. R. F. Sheets, Internal Medicine: Mr. Tinklenberg will discuss the protocol for the junior ward clerks.

Mr. J. Tinklenberg, junior ward clerk: The patient's history of angina pectoris and probable myocardial infarction, and his EKG interpretation, suggest atherosclerotic heart disease. The chronic myocardial ischemia and the old, fibrotic infarction were major factors in his congestive heart failure. His liver function tests can best be explained by intrahepatic lesions. We believe he had portal cirrhosis with superimposed central lobular necrosis from passive venous congestion. We doubt that his congestion was of sufficient duration or intensity to cause advanced fibrosis compatible with cardiac cirrhosis. The nonspecific anorexia, nausea and vomiting could have been the result of digitalis intoxication and/or cirrhosis. However, we think this patient had a neoplastic process, and the evidence points toward involvement of the gastrointestinal tract or accessory organs.

Although primary liver neoplasm has about a 50 per cent association with cirrhotic liver disease, we consider this possibility unlikely. There was no evidence of a rapidly-enlarging liver, severe portal hypertension, disproportionate increase in serum alkaline phosphatase or bloody ascitic fluid. There was scant evidence of obstructive involvement of the biliary outflow tract. In the absence of pancreatic pain, severe jaundice, and exocrine

or endocrine malfunction, a pancreatic neoplasm is improbable. The protocol gives no suggestion of change in bowel habits, persistent melena, anemia or lower abdominal pain, and thus we think that neoplasm of the lower gastrointestinal tract is unlikely. The patient had two upper gastrointestinal series which were interpreted as normal.

Despite this lack of radiographic evidence, we feel that he had a gastric malignancy, probably in the fundus or cardia, with peritoneal and liver metastases. We believe his death was the result of toxemia and acute peritonitis. The peritonitis was probably from perforation of the stomach by the neoplasm, although we couldn't definitely rule out iatrogenic causes or ruptured diverticula. His toxemia was compounded by congestive heart failure, extrarenal azotemia, portal cirrhosis with congestive lobular necrosis, and general deterioration from the gastric malignancy.

Dr. Sheets: Dr. Wilson will discuss the protocol for the staff.

Dr. William R. Wilson, Internal Medicine: I shall begin by asking the radiologist whether he can give us some help from the roentgenograms which were obtained.

Dr. Frank M. Behlke, Radiology: On his first admission, the patient had a barium enema which demonstrated multiple sigmoid diverticula. Also, the chest roentgenogram demonstrated cardiomegaly without specific single-chamber enlargement.

Dr. Wilson: Were there any indications of pericardial calcification?

Dr. Behlke: From the single posteroanterior projection, I couldn't detect any pericardial, myocardial or valvular calcification. Both lungs were expanded and appeared clear. There was no radiographic evidence to suggest pulmonary edema or passive congestion.

On the patient's final admission, another chest roentgen was obtained, and in contrast with the older chest film, it demonstrated considerable elevation of the right hemidiaphragm. Now, what could have caused that change? Infrapulmonary pleural effusion might be responsible. How can we distinguish whether free fluid is the cause, or whether there is an intra-abdominal abnormality such as an enlarged liver, an inflammatory process or a tumefaction beneath the diaphragm? If this were free fluid, a right lateral decubitus projection would have shown a layering-out of the fluid. But no such film was obtained. An upper-gastrointestinal series was negative, and we didn't find radiographic evidence of neoplasm or ulcerations. However in one sequence of films a lateral decubitus view of the abdomen was obtained, and it demonstrated a large amount of free intra-abdominal air. We thought it was more than could have been introduced by paracentesis. It seemed more likely to have been the result of a perforation of a hollow intra-abdominal viscus.

Dr. Wilson: Was there any evidence of an aneurysm of the left ventricle?

Dr. Behlke: No, sir. We cannot demonstrate evidence of aneurysm. We can't visualize evidence of metastatic disease in the bones, either.

Dr. Henry E. Hamilton, Internal Medicine: Are you going to show us the lateral view of the chest?

Dr. Behlke: It doesn't contribute anything to the diagnosis.

Dr. Wilson: Were oblique films taken?

Dr. Behlke: We didn't get oblique chest films.

Dr. Wilson: My reason for bringing up this point is that we have seen patients in this hospital who had definite chronic constrictive pericarditis, and the calcification was not visualized in the straight PA or lateral roentgens, but was seen when additional oblique films were taken. I believe the radiologists do find calcification in about 50 per cent of cases of chronic constrictive pericarditis.

At first glance, one might suppose that this man did, indeed, have severe congestive heart failure secondary to the supposed myocardial infarction that may have occurred 11 months before his first admission. Or as I've pointed out, he may have had a myocardial aneurysm. Against this latter possibility is the lack of clinical, radiologic or electrocardiographic signs of an aneurysm. One of the first aneurysms of the left ventricle on which we operated successfully was discovered, a few years ago, primarily because Dr. John Chapman, a former resident in the Department of Medicine, had astutely noted that the ST segments in the electrocardiogram remained elevated for several months after the patient suffered an acute myocardial infarction. As you know, these segments usually return to the base line within a relatively short time if uneventful healing occurs.

I was interested to note that on this patient's first admission, the hepatojugular reflux was negative. I think it is also of importance that there were no significant abnormalities of parenchymal liver function tests. Furthermore, it would be difficult to explain the finding of malignant cells in ascitic fluid on the basis of heart failure, unless one assumed that the test result was a false-positive. It is important to realize that the cytologists don't always come up with the right answer, and that occasionally they can make a false-positive diagnosis of malignant cells upon examination of ascitic fluid. In this discussion, I have assumed that the cells in the ascitic fluid were truly malignant.

As has already been mentioned by the students' representative, cirrhosis of the liver should always be considered in an older man with hepatomegaly and ascites. In this instance, an attempt should have been made to confirm the reliability of this patient's history of alcohol consumption. In my opinion the liver function tests do not support the diagnosis of Laennec's cirrhosis of the liver. The ratio of albumin in the ascitic fluid to albumin in the blood has been pointed out by a Mayo Clinic group as being of occasional help in deciding whether or not an individual has a hepatic ma-

lignancy or whether or not the disease process in the liver has been caused by Laennec's cirrhosis.[1] Those investigators have said that if this ratio is greater than about 0.45, in 85 per cent of patients one will usually find a cancer. In none of the patients with cirrhosis does one find a ratio of this magnitude. It is difficult to say how much of the protein in this man's ascitic fluid was albumin, but if one assumes that about 75 per cent of it may have been albumin, then his ratio comes out somewhere around 0.5—a value which again would make the diagnosis of cirrhosis an unlikely one.

Hepatoma is a rare disease that is found in less than one per cent of routine autopsies in this country, but in about four per cent of patients with cirrhosis. Cirrhosis is known to have been present previously in about 75 per cent of patients with hepatoma. In the patient under discussion, the liver was not described as nodular or enlarged. No bruit over the liver was mentioned, and the ascitic fluid was not bloody. Except for an elevated BSP test, there was no good evidence of parenchymal liver disease. In favor of the diagnosis of hepatoma were the development of ascites and hepatic enlargement without known provocation in a patient who supposedly did not have previous signs of hepatic decompensation, a rapid loss of weight, fever, leukocytosis, an elevation in the level of serum bilirubin and of serum alkaline phosphatase. It is well known that in patients with a hepatoma, ascites is often a prominent feature, since the tumor tends to invade the hepatic and portal veins.

A metastatic neoplasm of the liver is about 20 times as common as a primary hepatic tumor, and it occurs in about a third of all malignancies. Hepatocellular function may be completely normal, even if extensive metastases are present. BSP retention and a raised serum alkaline phosphatase are common findings. These metastases may be multiple, and often the clinical manifestations may point to the liver at a time when the primary lesion is not detectable. This is especially true of pancreatic, renal, pulmonary and gallbladder carcinomas. Chronic thrombosis of the portal vein occurs in about 10 per cent of patients with cirrhosis, and may be a complication of polycythemia vera, or of carcinomatous invasion of the vein from any of the structures that it drains. If this thrombosis occurs in a rather acute fashion, the early signs include abdominal pain, ileus, vomiting and diarrhea. Later, ascites and splenomegaly may appear, and if the thrombosis spreads to the tributaries of the portal vein, gastrointestinal infarction may occur, resulting in hematemesis, melena and peritonitis. In the Budd-Chiari syndrome, occlusion of the hepatic veins may be brought about by thrombus or by tumor arising either locally or by extension from the inferior vena cava. Hepatic vein thrombosis may result from hepatic cirrhosis, infection or malignancy, sometimes from a congenital stricture, from polycythemia, trauma, local or generalized phlebitis, or thrombosis from the inferior vena cava, which in turn is secondary to intra-abdominal suppurations, malignancy or trauma. Occlusions of the hepatic veins by tumor usually follow carcinomatous invasion of the vessels, either directly from the liver or indirectly by way of the inferior vena cava from the kidney.

The clinical course is variable, depending upon the extent of the occlusion, the speed with which it develops and the kind of underlying lesion. Occasionally, it is rapid in onset, with abdominal pain, vomiting, progressive enlargement and tenderness of the liver, and rapid accumulation of ascites. Jaundice, when present, is often mild. Patients with acute and complete occlusion may go on to shock, and die within a few days; others may live for months or years. Obstruction of the hepatic veins almost invariably leads to ascites, even in the absence of hypoproteinemia. It should be noted that during the first admission this patient had no hypoproteinemia. In the chronic form of the disease, ascites, hepatomegaly and signs of portal hypertension dominate the clinical picture. Small pleural effusions, chiefly right-sided, commonly occur in association with ascites. These may result from seepage of the ascitic fluid through lymphatic vessels of the diaphragm, but undoubtedly, forces which tend to produce edema contribute to the accumulation of pleural fluid also.

As I've already hinted, enlargement of the liver and ascites may also be caused by chronic constrictive pericarditis. In this instance, there is increased pressure in the cervical veins, in veins of the upper extremities and, in many cases, even in the veins of the forehead. Such manifestations are usually absent in patients with cirrhosis. In patients with a clinical picture resembling cirrhosis, but with the added feature of distended cervical veins, one should search very carefully for calcification of the pericardium, and as has already been mentioned, one should take oblique films as well as routine ones. Electrocardiographic findings of low voltage and flattening of the T-waves may be helpful. Atrial fibrillation may often be present. Occasionally, constrictive pericarditis will be confused with rare disorders of the endocardium or myocardium that produce similar disproportionate impairment of filling of the heart.

In a patient with classic features of constrictive pericarditis, one also has to think of the possibilities of constrictive endocarditis, such as are seen in fibroelastosis and subendocardial fibrosis, and also of those findings that are common to constrictive myocarditis such as are seen occasionally in scleroderma or in amyloid disease of the heart. If calcification of the pericardium or electrocardiographic signs typical of pericarditis are absent, it is often impossible to differentiate these conditions from constrictive pericarditis. Tuberculous, staphylococcal and pneumococcal infections are the usual causes of chronic constrictive pericardi-

tis, but other organisms or collagen disease may produce it.

Mesenteric arterial insufficiency should be suspected in elderly persons who have occlusive vascular disease elsewhere, and who have abdominal pain, weight-loss and diarrhea, but normal roentgenograms of the gastrointestinal tract. The combination of characteristic signs and symptoms with small gas shadows on an abdominal film, serosanguineous peritoneal fluid and a normal serum amylase sometimes help one make an accurate preoperative diagnosis. It should also be mentioned that occasionally myxedema will present with ascites as the first sign of the disease. I don't think it played a role in this man's death, but one should remember it when he is confronted with a patient with ascites. Free air under the diaphragm doesn't necessarily result from a perforation. In rare instances, Clostridia infections may present with free air in that area.

The majority of the signs and symptoms that this patient had, it seems to me, can best be explained by a metastatic neoplasm that arose either in the kidney, pancreas, stomach or somewhere else in the gastrointestinal tract, spread to the liver, involved the hepatic veins or possibly the portal veins, or both, and produced a rapid accumulation of ascites, weight-loss and, terminally, a peritonitis and perhaps a perforation. I cannot exclude the possibility that this man may have had a terminal pulmonary embolus, or perhaps tumor emboli spreading to the lungs.

Dr. Sheets: Dr. Wilson, what significance did you place on the negative hepatojugular reflux? The protocol says that cervical veins were distended with the patient reclining at a 45° angle.

Dr. Wilson: The hepatojugular reflux may have been negative if tumor had spread to and occluded the hepatic veins. It might have been helpful in this instance to know whether the neck-vein distention occurred higher up when the patient inspired. That would be most unusual, for in normal subjects the neck veins collapse on inspiration. Distention of the neck veins on inspiration suggests constrictive pericarditis, but it is not a reliable diagnostic sign, for it may be seen in other conditions such as severe congestive heart failure.

Dr. Hamilton: If there were constrictive pericarditis, a pericardial effusion or an atrial tumor, wouldn't the venous pressure be higher than the one that was recorded here?

Dr. Wilson: In constrictive pericarditis, the pressure is often two or three times the highest that was obtained in this patient. In a myxoma of the right atrium, there might very well be a high venous pressure. Usually, however, it is not so high as is seen in constrictive pericarditis.

Dr. Hamilton: The evidence presented is consistent with enlargement of the heart. Does this help you rule cardiac failure in or out?

Dr. Wilson: Well, this man had a considerable amount of azotemia, at varying times throughout his hospitalization, and he had retention of salt and water. I'm sure that anyone who has this combination, for any number of reasons such as amyloidosis or other diseases, can present the classical clinical picture of congestive heart failure. Obviously, I can't rule out the possibility that all the clinical manifestations could be explained by a carcinoma of the kidney and secondary amyloidosis or, indeed, a primary amyloidosis that would involve the heart and induce cardiomegaly. It might even produce the electrocardiographic findings.

Dr. Sheets: Any additional questions?

Dr. Hamilton: I still want Dr. Behlke to show us that lateral film and tell us whether he thinks there was any local, upward projection of the diaphragm. I think there was trouble below it. I'm still concerned whether there was infection below the diaphragm that could have been drained, and thus that the man's life could have been saved. If there was a neoplasm in or about the liver, the case was hopeless.

Dr. Behlke: There was a nonspecific elevation of the diaphragm, generalized all the way across. Infrapulmonary pleural effusion can mimic this, as well as enlargement of the liver, a phrenic-nerve paralysis with elevation of the right hemidiaphragm, or an intra-abdominal condition. This roentgen provides us no means of differentiating them. Now a decubitus projection would help us rule out pleural fluid. If the diaphragm maintained this contour, the cause wouldn't be fluid, and we'd be left to conclude that there was enlargement of the liver, or some other condition such as an abscess below the diaphragm. Fluoroscopy would enable us to tell whether the diaphragm had had a phrenic-nerve injury. With that technic, and by having the patient sniff and employ other variations of respiratory dynamics such as Valsalva's maneuver, we could have compared the motions of the diaphragm.

Dr. Wilson: This man was examined by fluoroscopy.

Dr. Behlke: And I think no paradoxical motion was found. That negative finding would tend to indicate that the upward bulge was not due to a phrenic-nerve injury.

Dr. Hamilton: As you look at those two films, what would you say about the likelihood that there is fluid above or an enlargement below the diaphragm pushing the diaphragm up? Fifty-fifty, or ninety-ten? So far, our physical examinations and clinical estimates can do better than the former.

Dr. Behlke: In cases of infrapulmonary pleural effusion, usually there is something that has gone on. The patient has undergone a surgical procedure and has developed fluid on that side, or there is a pneumonitis at the right base. In this patient, the diaphragm was sharply delineated and there was no evidence of an inflammatory

lesion on the roentgenogram. There was no paradoxical motion on fluoroscopy. These findings thus favor elevation of the right hemidiaphragm on the basis of an intra-abdominal condition. Whether that lesion was a stress ulcer or a perforation due to malignancy, or whether there was a perforation of a diverticulum, we can't differentiate by means of roentgenograms.

Dr. Wilson: Perhaps Dr. Hamilton was thinking of an amebic abscess of the liver.

Dr. Hamilton: Yes, indeed! Even when near death, patients with amebiasis can be expected to respond favorably when treated for this infection.

Dr. Sheets: Dr. Layton, what thoughts go through your mind when you try to evaluate a statement such as this: "On that day, the local physician called to say that he had received a report on the ascitic fluid which he had removed —that it was positive for malignant cells"? What is your reaction to this sort of statement—when anybody tells you this sort of thing?

Dr. Jack M. Layton, Pathology: "Positive for malignant cells" means to me that the ascitic fluid contains abnormal cells. I am unable to tell the difference between certain hyperplastic cells and a malignant cell by looking at a single cell. If there are clumps of abnormal cells rather than single ones, such a statement is better justified. If one is thinking of an adenocarcinoma, abnormal cells with either abortive attempts at acinar formation or actual acinar formation should be sought. Without clumps of cells, one should be reluctant to make an unequivocal diagnosis of malignancy, for the irritated peritoneum can shed cells that are very grotesque.

Dr. George N. Bedell, Internal Medicine: Dr. Wilson, how do you explain the fact that this man had a mildly elevated BUN on his first admission, and then on his next admission it was normal at first and then five days later it was 105 mg. per cent. It seems to me that one of those must have been wrong.

Dr. Wilson: Not necessarily. First of all, he had something wrong with his electrolytes. Initially he had a high BUN that varied between 35 and 50 mg. per cent. Today, we don't know absolutely whether he was in heart failure or not. At any rate, he improved when he was discharged, and when he came back he had a normal BUN of 19 mg. per cent, with a normal serum creatinine. Some five days later he had a disproportionate increase in his BUN, but his serum creatinine did not rise. In most circumstances, I think this is a good indication that there has been gastrointestinal bleeding, and that is probably the explanation I would give for the disproportionate change in this instance.

Dr. Sheets: Dr. Smith, you asked about a culture of the peritoneal fluid on the patient's second admission. I couldn't find a report on it.

Dr. Layton: Was the fluid clear and transparent?

Dr. Sheets: Yes, it was straw-colored.

Dr. Layton: It is highly improbable, then, that it was infected.

Dr. R. L. Givler, Pathology: The autopsy findings of most immediate significance in this patient were in the abdomen. The abdomen was distended. On opening the abdominal cavity, the prosector found an extensive peritonitis. Fibrinous and fibrous adhesions matted the serosal surfaces. There was 6,000 cc. of seropurulent fluid in the peritoneal cavity. Much of this fluid was loculated in a right subphrenic abscess that communicated with a pelvic abscess by way of the right paracolic gutter. A left subphrenic abscess was also present. The stomach and small intestine were normal, except for inflammation and thickening of the serosa. Diverticula were noted in the transverse, descending and sigmoid portions of the colon. One of the diverticula in the sigmoid colon was perforated, and there was communication of this perforation with the peritoneal cavity. The patient's most significant disease, then, was an extensive peritonitis associated with a perforated diverticulum of the sigmoid colon.

The heart was mildly hypertrophied, and presented an area of scarring that represented the residua of an old infarct, in keeping with the patient's clinical history. This involved the anterolateral wall of the left ventricle. A good portion of the left ventricular lumen was occupied by a mural thrombosis which was attached to the endocardium. There were focal adhesions of the overlying pericardium in the region of this old infarct, but there was no evidence of a constrictive pericarditis. There was no evidence of acute infarction, and no occlusion in the coronaries was demonstrated. The lungs presented general congestion and scattered macrophages containing hemosiderin. There was one small thrombus in a pulmonary artery.

The sections of small bowel showed fibrinopurulent exudate of acute peritonitis. There was also some chronic fibrous thickening of the serosa. The liver was enlarged at autopsy, its weight being approximately twice normal, and the sections of liver showed portal cirrhosis. In addition, there was chronic cholecystitis. The gallbladder was small, and scarred, and contained stones. There were a few minute stones in the common bile duct, but they probably were not obstructive, since the common bile duct was patent to probing, and there was bile in the duodenum.

No evidence of malignancy was found at autopsy. We obtained the slides that had been said to contain malignant cells, and several of us reviewed them. We do not feel that there were malignant cells present.

Dr. Layton: When was the ascitic fluid that Dr. Smith asked about drawn?

Dr. Ian M. Smith, Internal Medicine: It was drawn on about the third or fourth day of the patient's hospitalization, for I saw the patient then and requested a culture, but afterwards I couldn't

find a report of the results. I wonder whether the culture was done at all.

Dr. Sheets: Would you care to tell us what you observed when you saw this man?

Dr. Smith: On the third day, I wrote a note on the chart saying that this man had some cardiac failure, but that I felt his ascites and peripheral edema were out of proportion to the amount of cardiac failure he displayed. Moreover, he could lie fairly flat in bed without distress. I suggested that he might have pylephlebitis, a bacterial liver abscess, an amebic liver abscess, or a silent perforation of a viscus.

At that time, the resident and I discussed the case with the surgeon, and since the BUN was found to be elevated, it was thought unwise to do an exploration. We then started treatment, on the basis that with a perforated viscus the infection is likely to have been caused by Escherichia coli, or Bacteroides, or both. There may be other organisms, but these are the main offenders. Investigators at the Mayo Clinic feel that when one undertakes to treat an E. coli infection blindly—i.e., before learning the sensitivities—one had best use a combination of streptomycin and tetracycline, or Chloromycetin. The reason for our using Chloromycetin here was that in the presence of a possible abscess, Chloromycetin penetrates much better into the abscess than does tetracycline. Ours was a blind sort of chemotherapy, and as I have indicated, I awaited the results of the culture with interest. Apparently they never came back, for some reason or other.

I think a couple of points might be made with regard to some of the difficult chemistries. This man obviously had an exudate with a high protein content. He also had a low serum albumin. This can happen in infection, and there also can be a rise in the BUN from infection. Usually the creatinine will rise too. Whether this explains what happened here, I can't say, but as far as the patient's infection is concerned, I feel that the reported figures are not out of line.

We were still thinking of pylephlebitis and bacterial infection of the liver, and we thought that there was an associated BSP retention. Knowing nothing about the patient but suspecting an intra-abdominal emergency, I would still choose Chloromycetin, 3 Gm./day, and streptomycin, 2 Gm./day. Cultures should be taken to allow an adjustment of treatment later. In this type of complication—perforation or subdiaphragmatic abscess—the primary treatment must be surgical, as it would be with any abscess.

Dr. Sheets: The last-reported paracentesis was done five days before the patient's death, and the gram stain of the fluid was negative. There isn't a report of a culture.

Dr. Givler: Hemolytic streptococci and Paracolon organisms were cultivated from peritoneal fluid at autopsy.

Dr. Layton: To have had E. coli in very large numbers, the patient would have had a turbid ascitic fluid.

Dr. Smith: The fluid must have contained organisms at some time, for he had a lot of adhesions.

Dr. Layton: There was a lot of fibrin, obviously, and I wonder whether the fluid was, in fact, clear and transparent.

Dr. Givler: The cells in the ascitic fluid were largely lymphocytes and mesothelial cells. It is difficult to know how representative the specimen obtained at paracentesis was. In some cases of peritonitis, one can see pools of clear fluid loculated by adhesions, and grossly purulent fluid in adjacent areas.

Dr. Smith: Obviously, our chemotherapy must have been at least partially successful.

Dr. Sheets: From a study of the chart, and even with the autopsy material at hand, I think it's difficult to explain what happened. All I can make of it is that the patient had severe congestive failure on his first admission, that it did not respond very well to treatment, and that when he came back to the hospital he still had severe congestive failure. During his second hospitalization he perforated a diverticulum and developed a subphrenic abscess, but at what point that happened, I haven't any idea. Since Dr. Givler says the abscess under the right diaphragm was not an old process, I think the perforation was no older than seven or 10 days. The patient was followed closely on the ward. A number of good doctors saw him, and yet there was difficulty in establishing when this intra-abdominal crisis occurred. Dr. Ziffren, do you have any idea why this occurred?

Dr. Sidney E. Ziffren, Surgery: I have tried to picture what I would have done if I had been the surgeon who was called to consult on this case, and I think my decision would have been the same as that of the man who was, in fact, summoned. The patient obviously was in very bad shape. He had deteriorated rapidly, and he was said to have malignant cells in his abdomen. He was azotemic. Generalized peritonitis was present. The situation was almost hopeless.

When we meet this type of problem, we often fail. Many patients have severe cardiac disease or severe respiratory disease and develop another complication, either in the stomach or in the duodenum. It can be a perforating ulcer or a bleeding ulcer, or an acute cholecystitis can appear out of the blue. Occasionally an intestinal obstruction develops. But diverticulitis is relatively rare as the single complication, and a free perforation into the peritoneal cavity, with generalized peritonitis from diverticulitis, is extremely rare, even when the patient has nothing else wrong with him.

I believe this man's ascites was responsible for his free perforation of the diverticulum. It prevented the walling-off which ordinarily happens after a diverticulum perforates. Usually, the epiploic appendages, the omentum and the bowel become adherent to the site, and wall-off this area. The patient then ends up with a localized peridiverticular abscess. Occasionally we see a free peritoneal perforation, but it is quite uncommon.

This man wasn't really old—only 66 years of age

—but you are well aware that elderly people have reactions that are different from those of young patients. An elevated temperature or an elevated white blood cell count doesn't usually occur in the elderly. Yet this patient had a fever, and he also had an elevated white count. One clue that we almost always find in old people is a tachycardia, but we can't always find it readily. The patient may be receiving digitalis, and the tachycardia may be inhibited. When an old patient enters the hospital, I think it is extremely important for us to establish a base line. We must know what his abdomen is really like, and what his physical findings really are. Thereafter, one can tell, from day to day, whether there is any real change. Sometimes the changes are very small—tiny nuances to which we don't ordinarily pay any attention. The change may be in the patient's reactions—in the way he responds to the examiner. He may feel drowsy, he may be extremely restless, or he may resent anyone's coming near him. He may lose his temper just because he doesn't feel well, but he can't explain his attitude. These tiny changes are extremely important. Then, as one palpates his abdomen, he can tell that something has occurred. It may seem an insignificant change, but it can tip one off to the fact that something abnormal has happened. These are some of the ways in which we can help avoid missing these complications. Some will elude us, for we are only human, but we can keep them at a minimum.

In a significant number of patients, of course, we sometimes can help ourselves by doing an abdominal tap. Apparently one was done in this instance, but the purulent fluid was missed.

Another point is the one that Dr. Hamilton raised. If the patient has a diaphragm that is elevated, as this man's was, and if there is nothing in the chest that explains the elevation, something surely is wrong below it.

I don't know whether anything really could have been done if the perforation had been found earlier, for this was a pretty serious affair in a badly deteriorated patient. Nothing might have saved him. Nevertheless, constant suspicion of changes in the patient's physical state will help us in avoiding future errors.

AUTOPSY DIAGNOSES

1. Perforation of diverticulum of sigmoid colon
2. Diverticulosis of transverse, descending and sigmoid colon
3. Generalized peritonitis, with pelvic and subphrenic abscesses, secondary to perforation of diverticulum
4. Massive, old anterolateral myocardial infarct, with organizing mural thrombus, left ventricle
5. Portal cirrhosis, liver
6. Chronic cholecystitis, with cholecystolithiasis and choledocholithiasis
7. Jaundice, sclerae
8. Fetal adenoma, thyroid gland
9. Thromboembolism of branch of pulmonary artery.

STUDENTS' DIAGNOSES

Generalized peritonitis from perforation of stomach by carcinoma
Congestive heart failure
Extrarenal azotemia
Portal cirrhosis.

DR. WILSON'S DIAGNOSES

Metastatic neoplasm to liver, with involvement of hepatic veins and/or portal vein with ascites
Generalized peritonitis.

REFERENCE

1. Rovelstad, R. A., Bartholomew, L. G., and Cain, J. C.: Helpful laboratory procedures in differential diagnosis of ascites. Proc., Staff Meet., Mayo Clinic, 34:565-568, (Nov. 25) 1959.

Mental Health of the Older Adult

A conference on Mental Health of the Older Adult will be conducted on Wednesday and Thursday, March 10 and 11, by the U. of I. Institute of Gerontology in cooperation with the Department of Psychiatry and the Committee on Preventive Psychiatry, at the State Psychopathic Hospital in Iowa City.

The principal items on the program include:

"Comprehensive Mental Health—Concepts and Prospects"—Paul E. Huston, M.D.

"Recent Advances in Treatment of Mental and Emotional Disturbances in Older Adults"—Jack Weinberg, M.D., Illinois State Psychiatric Institute, Chicago.

"Enrichment of Life and Other Aspects of Preventive Mental Hygiene"—Wendell M. Swenson, Ph.D., clinical psychologist at the Mayo Clinic.

EXAMINATION OF INSTITUTIONAL ROLES

A. Special and general hospitals—Jacob H. Friedman, M.D., Fordham Hospital, New York City

B. Nursing, county and retirement homes—Samuel Levey, Ph.D., Massachusetts Health Department

C. Community mental health centers—Leroy K. Berryhill, M.D.

D. The community in general—Frank Itzin, M.A., Department of Social Work, U. of I.

EXAMINATION OF PROFESSIONAL ROLES

A. Practicing psychiatrists—Henry Kosieradzki, M.D.

B. General practitioners and other physicians—Elmer M. Smith, M.D.

C. Other professional personnel (e.g., psychologists, social workers, clergy and others)—Fr. Thomas W. Rhomberg, M.S.W., director of Catholic Charities, Dubuque

D. Research—Ethel Shanas, Ph.D., Department of Sociology, University of Chicago.

Editorials

LEST WE RIDE OFF IN ALL DIRECTIONS

A news dispatch from Washington shortly before the inauguration quoted Vice-President-Elect Humphrey as saying that the goals of the new administration in 1965 were to banish poverty, ignorance, intolerance, prejudice and discrimination, disease, famine and pestilence.

The implication that all of those goals are completely and simultaneously attainable reminds one of the nostrum of the old-fashioned medicine man, which was held out as a "sure cure" for all the ills to which mankind was heir.

It remains to be seen whether such a scattered pattern of attack can be effective in correcting or even ameliorating a single one of the social or physical maladies in our society.

The one great goal and the one great hope of mankind is peace. It thus would appear that the primary objective of our leaders should be the attainment of understanding among nations and of tranquility in this troubled world. The dreams of "The Great Society" can never be realized without the assurance of peace. Total effort at securing peace is just as necessary as total effort in the event of war.

Would it not be wiser to focus our attention and direct our energies toward more circumscribed goals?

A PATTERN FOR RETIREMENT

Grow old along with me!
The best is yet to be,
The last of life, for which the first was made;
Our times are in his hand
Who saith "A whole I planned,
Youth shows but half; trust God;
see all, nor be afraid!"

Few people who reach the afternoon of life subscribe to the philosophy so eloquently expressed by Ben Ezra, but when one finds people whose spirit and way of life fulfill the promise "The best is yet to be," he finds them truly inspiring.

A recent letter from an elderly friend reflects a point of view that everyone in "the last of life" could profitably emulate:

> "I can't write much, but I think a lot, and I do so with wonderful memories. I have discovered, in my eighties, what I didn't realize before—that living in the past doesn't mean that you are in your dotage, but that you can select all the choice events to think of, instead of the sad fact that you must lose so many of the friends of your generation."

This came from a gracious lady who is recovering from two simultaneously broken arms. Despite discomfort and limitation of motion in both wrists, she is writing letters and she has resumed playing the piano and organ.

Her husband, undaunted by poor vision and poor hearing, and almost 90 years of age, is busily engaged in sketching, painting and experimenting with ceramics. His enthusiasm, ebullient spirit and numerous interests enrich the lives of all about him.

Residents of a retirement home for many years, these two people have found fulfillment in their declining years. They express no bitterness; they don't complain of boredom; life continues to be a challenge. They are unafraid.

By their example, their good cheer, their wholesome philosophy, and their courage and faith, they do their part to make this a better and a happier world. May the light of their candle illuminate the way for all of us!

NEUROCIRCULATORY ASTHENIA

The popularity of certain diagnoses can wax and wane, sometimes quite inexplicably. Dr. Paul Dudley White has recently called for a revival of "neurocirculatory asthenia," which was a popular diagnosis during and after World War I, but for some reason has almost disappeared from the literature in recent years.* He points out that recognition of the condition dates back to the Civil War. It originally was termed "the irritable heart of soldiers," and later it was called "effort syndrome." During World War I, the name "neurocirculatory asthenia" was adopted.

Considerable emphasis was given to this entity in medical schools and medical wards during the twenties. It was frequently considered in the differential diagnosis of various cardiac conditions, thyrotoxicosis, neurosis, etc. With the passage of the years, however, "neurocirculatory asthenia" almost disappeared. On patients' charts in a large general hospital during World War II, this diagnosis was rarely seen, nor was it heard in a large number of disposition and retirement boards.

The eminent Boston physician points out that neurocirculatory asthenia is a disease characterized by a group of symptoms of unknown etiology, and that it is a distinct clinical entity. It is frequently confused with anxiety neurosis, or organic or functional cardiac disease, and patients with this malady are often accused of malingering.

The symptoms vary in intensity from very mild

* White, P. D.: Neurocirculatory asthenia: still common and important clinical condition. NEW ENGLAND J. MED., 271:1362-1363, (Dec. 24) 1964.

ones which interfere very little with the patients' daily activities, to symptoms of an intensity that make them seriously disabling. The classical complaints are weakness, breathlessness, precordial discomfort and palpitation. Dizziness is also a common complaint, and faintness to the point of syncope is not uncommon. The symptoms are multiple, and the larger the number of complaints, the greater is the justification for the diagnosis of neurocirculatory asthenia. Though the patient may have organic disease, the multiplicity of symptoms cannot be explained on that basis. Nervousness and apprehension are common, but the condition is not considered a neurosis *per se*. A family history of similarly-affected individuals can frequently be elicited.

Dr. White emphasizes that this condition "must be recognized all over again," for it is being confused with simple neurosis or heart disease, and that it is not being recognized as a disabling entity in itself. Although the cause it unknown, it is just as disabling as if it were an organic disease. The Boston cardiologist urges that greater effort be made to determine the etiology of this condition, and that greater emphasis be given it in medical schools and in postgraduate courses for practicing physicians. He concludes his article with the statement: "Neurocirculatory asthenia is still a common and important clinical condition."

EDUCATION FOR THE CULTURALLY UNDERPRIVILEGED

"The way for him who would seek knowledge is a long, hard and lonely journey, because no one can learn for another. Money, color, size, religion—whatever you can think of—are all to no avail. Learning is the hardest, most selfish taskmaster in the world. It is self-motivated, never ending, and relentlessly devouring in its demands upon him who would acquire wisdom."

The above words were written by Frederick J. Gillis, Ph.D., then superintendent of the Boston Public Schools, in his annual report for the school year 1962-1963.* He described the road to knowledge in discussing the problem of educating Negroes and others of the culturally underprivileged —particularly the Negroes who have migrated to northern cities from the Deep South.

Dr. Gillis said, and all of us will agree, that the Negro child and the white child from virtually illiterate and culturally unambitious families, are entitled to a way of life equal in every respect to that which is given to average American children. In a democratic society an education is the birthright of every child—an education for each commensurate with his intellectual potential. It has been a popular idea that the abolition of slums would permanently benefit the people who have inhabited them, but without an education the Negro is deprived of the training and skills demanded by the World of Work, and without a good job he is, of necessity, forced to live in a slum or even to create one.

The problem is a complex one that can't be solved merely by offering slum children the same educational opportunities that are presented to youngsters from better backgrounds. In the deprived Negro home, Dr. Gillis has pointed out, parents lack aspirational goals, and they offer little incentive to their children. Thus, schools adapted to the needs of such pupils must differ from usual ones in curricula, in tempo of work, and in what teachers expect of the students.

He states emphatically that if the status of Negro children is to be improved, a richer home life must be provided them—richer in terms of ideas, experiences and hopes. He says Negroes must be made to realize "that the home has been and continues to be an essential and integral part of the education of the child, that the educational output of the man is in direct proportion to input, and that input begins in the home—at the mother's knee. This fact cannot be overstated."

There is great concern nowadays over problems of unemployment and of illiteracy, so that adult education and the training of school dropouts are receiving serious attention. Dr. Gillis states that the "average" American has an eleventh-grade education, and that less than half of the adults in this country have completed high school. Only about 8 per cent have college degrees. It is estimated that there are about 8,000,000 people over 25 years of age—8 per cent of that age group—who are functionally illiterate. In other words, one American in every 12 over 25 years of age cannot read and write at the sixth-grade level.

The education of the Negro and the training of the dropout of whatever color are the concerns of all thinking Americans. Providing more schools and more teachers, and spending more millions of dollars, are but minor problems for our affluent society—particularly when the national debt of some $300 billion appears to cause no concern to our politicians. Providing vocational training to this group is one thing; making them industrious, reliable and trustworthy citizens is another and much more complex problem.

In a recent televised interview on "Meet the Press," Mr. Sargent Shriver, head of the administration's new program of job-training for the unemployed, was asked how these people could be motivated. His reply was, "We will give them motivation." It will be highly interesting to observe the outcome of this new program, and to see whether Mr. Shriver and his colleagues can sit *in loco parentis* and provide the essential "mother's knee." There should be careful screening of candidates for this program. It is hopeless to help the constitutionally inadequate achieve competence.

A new approach to the education of children

* Gillis, F. J.: Annual Report of the Superintendent, Boston Public Schools, 1962-1963.

Editorials continued...

from underprivileged homes is being carried out in several American cities, and reports indicate that it shows great promise. It places the deprived youngsters in pre-schools and provides them experiences more nearly paralleling those of children from average American homes. Youngsters given this opportunity do well when they enter school, excelling those of their peers who haven't had the benefit of this extra training, and equaling the performances of children from homes with much greater advantages. Perhaps it is in this area that the greatest impetus can be given to the education of the deprived children of all racial and ethnic backgrounds.

Serious social diseases demand the attention of the medical profession, and physicians in every community should assist as much as possible in their prevention and cure.

AMPUTATION FOR DIABETIC GANGRENE

A recent analysis in LANCET, of the outcomes of amputation in a group of diabetic patients and of survivals after the operations, should be of unusual interest to all physicians who care for patients with diabetes.* The study was designed to determine the number of amputations each patient had to undergo, the degrees of motility achieved after amputation at different levels, and the duration of hospital stay and length of survival after amputation.

The study group included 63 patients and covered the period from 1952 to 1962. Thirty-seven of the patients were female and 26 were male. Their average age was 69 years, but amputations were necessary in 11 patients who were under 60 years of age. Most of this group were under the care of one physician and an orthopedic surgeon. A conservative policy was followed, and a distal amputation was performed where there appeared to be any chance of its sufficing. At the time of the study, follow-up of the 63 patients had been completed by reading hospital records or by visiting the patients in their homes. On those patients who had died or moved elsewhere, information was procured by interviewing the family physician or the available relatives.

In the group of 63 patients, a total of 99 amputations had been performed in 83 admissions to the hospital. There were 39 amputations of toes, 29 amputations of the leg below the knee, and 31 amputations above the knee.

At the time of the report and after complete follow-up, it was found that 15 of the 63 patients who comprised the 10-year study were living. During the 10-year period, 48 of the group had died, and 16 of the deaths had occurred in the hospital after surgery.

Thirty-nine toe amputations had been performed on 27 patients. In 17 of these, the patient had survived for one year after surgery and no further operations had been necessary within the year. In nine patients a higher amputation of the leg, either above or below the knee, had been necessary within one year. In five patients in whom a toe amputation had been done, further surgery had not been performed, but results could not be evaluated because the patient had died within a year.

In the group of 17 patients for whom further surgery was not required within a year after amputation of a toe, the average survival time was almost five years. However, after the first year, two further toe amputations and three below-the-knee amputations were performed in this group. In about one-fourth of the 39 patients who had had toe amputations, higher amputations of the leg had been done within a year. The causes of death in the five patients who died within a year following operation were heart failure in three; uremia in one; and cerebral hemorrhage in one.

There was an absence of foot pulse in 20 of the 39 patients who required toe amputation; neuropathy was present in 15; and in 14 patients both neuropathy and absence of foot pulse were recorded. In the group of 17 patients who had survived one year with no further surgery, four had no palpable foot pulse. Thus, the absence of pulsation in the dorsalis pedis artery doesn't necessarily indicate that a local amputation will be unsuccessful.

Among 29 patients who had below-the-knee amputations, four required an above-the-knee amputation because of failure of the stump to heal. The second amputation was done within two to four months after the initial operation.

There were 47 patients who had lost one leg, and of that number 13 subsequently required amputation of the other leg, too. In four of these, the interval between the two operations was less than one year.

Following toe amputation, all of the patients who lived for one year without further surgery were able to walk again, and of these 17 patients, six returned to work, nine were able to be up and about, and two were confined to their homes because of disability.

Among 45 patients who had survived amputation of a leg, 19 were fitted with prostheses and 15 of this group achieved independent motility. Three patients were unable to use prostheses but did use crutches successfully. The remaining 27 were restricted to a bed-and-chair existence. Men were much more successful than women in the use of prostheses.

Thirteen patients underwent amputation of both legs, and eight of them lived more than a year after the second operation. Of the eight, only two

* Cameron, H. C., Lennard-Jones, J. E., and Robinson, M. P.: Amputation in diabetic; outcome and survival. LANCET, 2:605-607, (Sept. 19) 1964.

were fitted with prostheses and were able to use them with any degree of success.

In all, there were 83 admissions for this group of 63 patients. Sixteen died in the hospital, and 67 survived to be discharged. The average of the postoperative stays was 65 days, and they varied from 10 to 229 days. For the patients who underwent more than one amputation, the average stay was about three months.

The five-year survival rate for this group of patients was 70 per cent for those who underwent toe amputation, and 35 per cent for those subjected to leg amputation.

In discussing their experience in the management of this group of patients, the authors say that their findings provide no definite clue as to the correct time to amputate. If there is any question about the level at which to amputate, the findings suggest the following:

1. The functional result of an operation on the foot is usually excellent.
2. Of every 12 patients who lose a leg, five will be able to walk again, and three may lose the other leg.
3. The amputation of a leg doesn't usually assure an early discharge from the hospital. The length of the hospital stay didn't vary to any considerable extent with amputations at different levels, and thus it should not be a factor in a decision as to the level of amputation.

It is emphasized that the good functional result following amputation of a toe suggests that every effort should be made to save the foot. If there is a good blood supply to the foot, local treatment will ordinarily suffice; however, a poor blood supply, as determined by the absence of foot pulses, doesn't necessarily mean that local treatment will certainly fail.

The functional result following leg amputation, in the experience of these British surgeons, depends less upon the level of amputation than upon numerous other factors. The elements that enter into a decision about whether to amputate above or below the knee include a consideration of operative mortality, the emotional response of the patient, the usefulness of the stump and the realization that amputation of the other leg may be necessary. An above-the-knee amputation doesn't preclude a good functional result.

ANESTHESIA AND ISCHEMIC HEART DISEASE

A comparative study at St. Bartholomew's Hospital, London, of electrocardiograms taken before and after surgery under general anesthesia in a group of patients with ischemic heart disease and severe hypertension showed a surprisingly high incidence of deterioration.* The study attempted to relate the electrocardiographic changes to the type of operation and to the kind of anesthesia employed, and to identify the factors which seemed likely to have caused changes in the electrocardiograms.

Twelve-lead EKG's were taken preoperatively on patients with known or suspected ischemic heart disease, diffuse arterial disease or hypertension. Hypertension was defined as a systolic pressure of 200 mm. Hg or over, or a diastolic pressure of 120 mm. Hg or over. Tracings were taken the day after the operation on those patients whose preoperative EKG's had shown evidence of ischemic heart disease, and on those who had been hypertensive. Then serial tracings were taken on those patients who had shown marked changes between pre- and postoperative graphs.

There were 217 sets of tracings, and all but 12 of them justified diagnoses of ischemia or showed ST or T changes indicative of left ventricular strain. The readers received the electrocardiograms in pairs, without information about the order in which they had been taken. Changes were classified by means of the following grades:

0—No change
1—Slight changes which are commonly seen as daily variations in patients with ischemic heart disease
2—Marked changes in ST segments of T waves, or the development of bundle branch block
3—Changes in T waves of a degree suggesting acute infarction.

An analysis of the 217 sets of tracings showed that 48 (22 per cent) indicated significant electrocardiographic deterioration. In 45 of the patients the changes were classified as grade 2. Three patients showed changes suggestive of acute myocardial infarction, but none of these patients complained of chest pain. In two other patients, additional EKG's were taken within a week after surgery because of chest pain. Both of these showed evidence of an anterior infarction, and both died later. In these individuals, there were no changes from the preoperative to the postoperative tracings. Thus, the incidence of known or suspected myocardial infarction in the group of 217 patients totaled five (2.3 per cent). Minor changes had occurred in 71 of the EKG's. In 23 of them there was evidence of slight improvement, and in 48 instances the tracings were interpreted as showing some degree of deterioration. In five instances there was marked improvement.

The group of 217 patients consisted of 106 males and 111 females. Most of them were in the age group between 50 and 80 years of age. Neither sex nor age appeared to be a factor in the risk of deterioration of the electrocardiogram following surgery. Hypertension was present in 93 of the group, but this did not appear to have been a significant factor in the worsening of EKG's after operations.

Marked electrocardiographic changes occurred in 28 per cent of those who had abdominal opera-

* Chamberlain, D. A., and Edmonds-Seal, J.: Effects of surgery under general anesthesia on electrocardiogram in ischemic heart disease and hypertension. BRITISH M. J., 2:784-787, (Sept. 26) 1964.

Editorials continued...

tions, compared to 18 per cent in those of the non-abdominal group. In the 54 patients in whom the peritoneal cavity was opened, the incidence of deterioration increased to 33 per cent. The duration of the operation also appeared to have been a factor, since 34 per cent of those whose operations lasted more than two hours had marked worsenings in EKG's.

The blood pressure was carefully monitored during the operation in 155 patients. In 45 of this group, the maximum fall in blood pressure was less than 50 mm. Hg; in 68 patients the fall was between 50 and 90 mm. Hg; and in 42 patients the drop in blood pressure exceeded 100 mm. Hg. The incidence, of EKG deterioration in these three groups were 13 per cent, 19 per cent and 24 per cent, respectively. The duration of the blood-pressure drop was also a factor in the worsening of EKG's.

All patients were given a general anesthesia. Eighteen anesthetists participated in the program. Premedications appeared to have had no effect on the EKG changes. Many different types of anesthesia were employed. Of the 217 patients, 112 were intubated and 105 were not, and the incidences of deterioration in EKG's were about equal in the two groups. It appeared to make no difference whether halothane or ethylene were given. Initially, it was thought that the use of long-acting relaxants and of intermittent positive-pressure respiration was followed by adverse EKG changes, but both were employed in abdominal operations, and it was concluded that opening the abdomen accounted for the worsening of the tracings.

Additional postoperative tracings were taken on 32 patients who had shown the most marked deterioration, and evidence that fresh ischemic changes had resolved was found in 13 of the 32 patients, and some improvement was found in a number of others.

In the judgment of the authors, the changes in pattern between pre- and postoperative tracings were more than mere fleeting alterations, but represented muscle injury or in some cases muscle death. This occurred in patients who already had heart disease and some diminution of cardiac reserve.

From the study, it is apparent that surgery under general anesthesia in patients with ischemic heart disease and severe hypertension carries an appreciable risk of deterioration of the electrocardiogram. A realization of this hazard should affect the planning of any surgical treatment for such individuals. Factors that appeared to increase the risk included a fall in blood pressure during anesthesia, the duration of the operation, and abdominal incisions.

FOR YOUR BULLETIN BOARD

The percentages of increase in cost of the following items in the Consumers' Price Index, based upon the annual averages of prices from 1936 to 1963, should be brought to your patients' attention:

	Per Cent		*Per Cent*
Food	147.3	Laundry services	158.9
Milk, delivered	126.4	Automobile repairs	112.0
Hospital rates	475.0	Dentists' fees	113.2
Shoe repairs	204.5	PHYSICIANS' FEES	111.1
Men's haircuts	295.1	ALL ITEMS	120.9
Movie admissions	191.0		
Public transportation	169.4		

The above tabulation was provided by an assistant commissioner of the U. S. Department of Labor to a Massachusetts physician, and was quoted in a Letter to the Editor in the January 14, 1965, issue of the NEW ENGLAND JOURNAL OF MEDICINE.

We suggest that a copy of these figures be posted in a conspicuous place in every physician's office.

Trauma of the Head and Neck

U. OF IOWA COLLEGE OF MEDICINE, IOWA CITY

Friday, April 23

9:15 a.m. "Reconstruction of Events in Fatal Automobile Accidents"—Paul W. Gikas, M.D., pathologist, University of Michigan

9:55 a.m. "Sudden Trauma to the Airway and Larynx"—Joseph E. Ogura, M.D., Washington University, St. Louis

10:45 a.m. "Modern Management of Shock"—E. E. Mason, M.D.

11:55 a.m. "Handling the Unconscious Patient Before and During Transfer"—W. K. Hamilton, M.D.

1:30 p.m. "Cervical Spine Fracture Dislocations Associated With Facial Injuries"—G. E. Perret, M.D.

2:10 p.m. "Recognition and Immediate Management of Maxillofacial Fractures"—Leslie Bernstein, M.D.

3:00 p.m. "Trauma of the Mandible"—Merle Hale, D.D.S., head of oral surgery, U. of I.

3:40 p.m. "Acute Eye Trauma"—P. J. Leinfelder, M.D.

4:00 p.m. "Extraocular Injuries"—R. C. Watzke, M.D.

4:20 p.m. "Acute Cranio-Cerebral Injury"—H. B. Locksley, M.D.

6:30 p.m. SOCIAL HOUR AND BANQUET—University Athletic Club

Saturday, April 24

9:00 a.m. "Practical Diagnostic X-Rays in Head and Neck Trauma"—H. W. F. Pribram, M.D.

9:40 a.m. "Do's and Don'ts of Cuts and Lacerations" —W. C. Huffman, M.D.

10:30 a.m. LABORATORY COURSE IN PLASTIC CLOSURE OF TRAUMATIC LACERATIONS

Letters to the Editor

Sir:

I read with interest the recommended schedule for immunizations in the JOURNAL OF THE IOWA MEDICAL SOCIETY, volume 55, number 1, page 47.

I would like to draw your attention to the fact that the American Academy of Pediatrics has recently advised changes which probably ought to be incorporated in the schedule which you have published. It has been recommended that trivalent Sabin oral polio vaccine should be given in three, not two doses when given to infants less than one year of age. A booster should be given one year after completion of these immunizations and again at school age.

It might also be advisable to incorporate into your schedule a recommendation on tetanus booster shots at time of injury.

For example, if a youngster, previously immunized against tetanus, suffers an injury more than one year after he has had his last tetanus booster, he should have a booster at time of injury. This is a situation which is often confusing to physician and patient alike.

It might also be advisable to make it known that booster shots containing diphtheria toxoid, if given to children *eight years or older*, should be of the "adult" type toxoid (tetanus-diphtheria), adsorbed or precipitated for adult use. These are corrections recently added to the Academy's "Red Book" on infectious diseases, and a note to that effect probably ought to be published.

I thought you might permit me to bring this to your attention.

Sincerely yours,
WALTER M. BLOCK, M.D., F.A.A.P.
Cedar Rapids

Sir:

Dr. W. M. Block seems to feel that our summary of immunizations might be inaccurate and not represent the recommendations of the American Academy of Pediatrics.

I don't believe that anything that we have put in the summary in the January, 1965, JOURNAL is contrary to statements in the American Academy of Pediatrics Red Book for 1964. It was simply a question of reducing the information to a few basic words that can be put into a square. We have, in no sense, tried to give complete information to parents regarding immunizations. We have tried to present a basic program showing what immunizations should be given, the relative number to be taken and something about the timing of the immunizations themselves and of the boosters. For example, we did not have room in the one space to put in adult type of diphtheria-tetanus toxoid. For the same reason, we did not state youngsters starting poliomyelitis immunizations at the age of two or three months should have a booster about six months later or about eight months of age. We did not state the same thing for those starting plain pertussis vaccine at a period earlier than the usual age of six months. Here again, the Academy of Pediatrics suggests routine recall injections should be given eight months after the completion of the primary series. In a similar way, we did not have space to recommend that a youngster with eczema should not be vaccinated for smallpox or even permitted to remain in the house with those vaccinated for smallpox.

I realize that as the editors took our material out of the boxes and spread it over a page, it looks as though more information could have been provided. However, the information given in the JOURNAL was to let physicians know that we did have schedules that they could use to show their patients something of what was needed in the way of immunizations, and something of the timing and the boosters or recall immunizations needed. That is all we could attempt to give in such a small space.

Very truly yours,
RALPH H. HEEREN, M.D., Director
Division of Preventable Diseases
State Department of Health

JAMA Urges Use of Brand Names in Prescriptions

In writing a prescription, a physician should use the drug's trade name or the manufacturer's name to make sure the patient will receive the drug "in a form of highest quality and expected potency," according to an editorial in the November 9 issue of JAMA. "In most prescribing situations, a modified generic name or a brand name is necessary if the physician is to retain control over the source of supply," the editorial asserted.

"Having decided that medication is required, he should assume the responsibility for selecting a manufacturer who will supply the drug in a therapeutically effective form at the lowest possible cost to the patient." This can be done in one of three ways: by writing the generic name plus the name of the manufacturer known to be reliable; by writing the desired brand name; or by writing the generic name plus the desired brand name. "When a physician uses a brand name or a manufacturer's name to designate the source of supply," the editors concluded, "he is fulfilling a part of his professional obligation to his patient."

President's Page

Nearly 2,000 years ago, Christ admonished the Pharisees to "render unto Caesar the things which are Caesar's, and unto God the things that are God's." Unfortunately, he didn't say which were which, and the line that divides the civil prerogatives of society from the religious and moral responsibilities of its people remains cryptic and tenuous.

In the Eighteenth Century, Voltaire concluded that "all men would be necessarily equal, if they were without needs. . . . It is not the inequality which is the real misfortune; it is the dependence." A hundred years later, Karl Marx asserted that economic materialism was the total moral value of society, and advocated taking "from each according to his abilities," and giving "to each according to his needs."

Today, as Marx predicted, all of the governments in the world, including our own, accept this principle. They vary only in the degrees to which they apply it. But however excellent this concept of justice, its realization depends upon the government's using its coercive power to regulate the creative activities of the people.

This applies, regardless of whether a government uses the *persuasive* mechanism of taxation or the more *compulsory* technics of majority rule, government by consensus, or the police state. And the resultant system is a form of statism, whether it be called fascism, communism, socialism, welfare statism or "people's democracy."

If the greatest of all physicians were consulted today, He would be hard pressed to find "the things which are God's." However much the advocates of pragmatic collectivism extol the humanistic justice of their cause, there is no major form of statism that doesn't have an atheistic concept as its principal tenet.

In the Sermon on the Mount, Christ exhorted His followers to "Beware of false prophets, which come to you in sheep's clothing, but inwardly they are ravening wolves." Almost in utter mockery of Christianity, the Fabian Society selected as its coat-of-arms just such a wolf in sheep's clothing. It is shown in a stained-glass window commissioned by George Bernard Shaw which is now to be found in Beatrice Webb's House, a memorial financed by the world socialist movement.

Otis D Wolfe

President

IMS Executive Council

January Sessions

The Executive Council was told that plans for the new IMS headquarters office, to be constructed at Tenth and Grand Avenue in West Des Moines, were nearly in final form, and that bids would be let in approximately three weeks. The Building Committee expected to have sketches and blueprints of the building available for showing at the 1965 IMS annual meeting.

IOWA MEDICAL FOUNDATION

It was agreed that appropriate exhibit space should be made available to the IMS Woman's Auxiliary, at the annual meeting. The Auxiliary plans to raise funds for the Iowa Medical Foundation by selling gold and silver charms bearing medical insignia, at a booth there. The Polk County Medical Auxiliary, it was announced, had made a contribution of $372.90 to the Iowa Medical Foundation.

HAWKEYE SCIENCE FAIR

The Executive Council was told that over $1,700 had been contributed by various professional and business organizations for the Hawkeye Science Fair Scholarship and Award Fund. The IMS cosponsors the Fair annually, along with the DES MOINES REGISTER AND TRIBUNE and Drake University.

AMA KERR-MILLS CONFERENCE

A report was presented on a Kerr-Mills Conference sponsored by the AMA and held in Chicago on January 9-10. Each state medical society had been represented, and representatives were asked to report on the status of Kerr-Mills in their respective states, as well as the changes that they thought would make the program more effective there. Although there were no final conclusions and recommendations, the following were the points most widely agreed upon:

1. Liberalization of income and resource standards to make increased numbers of the aged eligible.
2. "Percentification" of eligibility, preferably on an annual basis.
3. Utilization of a private organization, e.g., Blue Cross-Blue Shield or a health insurance company, as a fiscal agent or underwriter of MAA benefits.
4. Separation of the MAA program from the "welfare concept," possibly by putting it under an agency such as the state department of health.
5. Elimination of filial-responsibility provisions, as of no value.

It was emphasized that the Iowa MAA program already has many of these features, and is one of the best and most comprehensive in the country. Further, every effort should be made to have the present program continue, virtually unchanged.

"ELDERCARE"

The essentials of the AMA proposal for federal-state financing of comprehensive health care for needy persons 65 years of age and older, entitled "Eldercare," were reviewed:

1. Through private insurance carriers, including Blue Cross-Blue Shield, people over 65 would purchase a wide spectrum of medical, surgical and hospital benefits, and would pay none or just a part of the cost of the insurance premium, depending upon their income. For individuals with incomes under specified minimums, the state agency, using federal and state funds, would pay the entire cost.
2. Eligibility for benefits would be determined quickly and readily on the basis of a simple income statement submitted by the applicant.
3. The program would operate through the established insurance system, by utilizing Blue Cross-Blue Shield and private insurance carriers.
4. Administration of Kerr-Mills should be transferred from state departments of social welfare to state departments of health.

In reference to point 4, above, the Council was told that the acting commissioner of health for the State of Iowa had called IMS headquarters to say that his department is not equipped, nor does it desire, to assume responsibility for administering the MAA program in Iowa. It had then been explained to him that the IMS representatives hadn't discussed that proposal with the AMA and didn't intend suggesting that such a change be made in Iowa. The Council was informed that the director of medical services for the State Department of Social Welfare was also provided that information.

In preparation for a special session of the AMA House of Delegates, which was to be held in Chicago on February 6-7, it was thought advisable for the Council to instruct the IMS delegates regarding any proposals that might be designed to change or extend "Eldercare." Following a lengthy discussion, the Executive Council recommended to the IMS delegates to the AMA that they support the AMA position whereby all medical welfare programs utilizing state and federal funds be administered and controlled at the local and state levels, preferably along the lines of the Iowa MAA program.

The Council also agreed that a telegram should be sent to Dr. Ward expressing its support of his efforts to maintain the principles outlined in his statement, i.e., "We are maintaining our basic positions that (1) all those over 65 who need help in paying for health care should receive it; (2) in providing this help the relations between the states and federal government should be preserved, with

maximum responsibility and authority delegated to the states rather than to a centralized Washington authority; and (3) voluntary health insurance and prepayment principles should be utilized whenever possible."

The Council was informed that the AMA would launch a national educational program designed to acquaint the public with the merits of Eldercare, and to attempt to persuade Congress to adopt it. In conjunction with the national campaign, the AMA would make funds available to state medical societies, on a matching basis, to carry out local public information programs. The Executive Council approved IMS participation in the state and national public information programs.

AD HOC COMMITTEE ON USUAL-AND-CUSTOMARY-FEE PLANS

It was announced that on January 1, 1965, a medical and surgical expense benefits plan, developed by Aetna Life Insurance Company, was made available to eligible employees of the International Harvester Company in the Quad Cities and in other areas in Iowa. Special features include usual and customary fees for physicians based on a $7,500 income level; no fixed, rigid fee schedule or coinsurance; freedom of choice of physician; and benefits payable directly to the physician. Aetna representatives consulted with the Scott County Medical Society regarding this plan, and the Scott County Society probably will cooperate by setting up appropriate procedures for reviewing and adjudicating unusual claims. Aetna and the Iowa Health Insurance Council also provided information on this program to the IMS.

The Council was told that since it is likely that other insurance companies will establish similar usual-and-customary-fee programs, the IMS president, with the advice and consent of the Board of Trustees, had appointed a special fact-finding committee to study all such plans in detail.

IMS/BLUE SHIELD MEMORANDUM OF UNDERSTANDING

The chairman of the Board of Trustees announced that, as directed by the House of Delegates, IMS and Blue Shield representatives had held and would continue to hold joint meetings to discuss matters of mutual concern and to resolve problems. A revised IMS/Blue Shield Memorandum of Understanding was developed and approved by the Executive Council on January 14, 1965, and by the Board of Directors of Iowa Medical Service (Blue Shield) on January 24, 1965.

AREAWIDE HEALTH FACILITIES PLANNING

A member of the Committee on Medical Education and Hospitals highlighted a summary report on the First National Conference on Areawide Health Facilities Planning, held in Miami Beach on November 28 and 29, 1964, immediately prior to the AMA Clinical Session. Following the conference, the AMA reiterated its vigorous opposition to any attempts to make areawide planning compulsory, and approved a resolution stating that it is essential for there to be an adequate number of practicing physicians on state Hill-Burton advisory councils, and on areawide planning groups or councils. Further, these physicians should be nominated by state and component medical societies in the planning agency's area.

UTILIZATION STUDY

The chairman of the Subcommittee on Utilization reported on meetings between IMS representatives and representatives of the Iowa Hospital Association to consider a utilization study in Iowa. He said that they had agreed on the desirability of conducting a study on the pattern of one that is under way in Missouri, where the Keysort card system is being used to obtain pertinent information from participating hospitals about diagnoses, lengths of stay, types of service rendered, etc. In Iowa, the cards would be returned to the IMS/IHA joint committee for study and analysis.

He announced that the IHA had approved the project as a pilot study, and had indicated that at least 20 hospitals would participate. The Executive Council authorized the Subcommittee to proceed with plans to implement the study as a pilot project.

A recommendation from the Subcommittee on Utilization that its name be changed to "Medical-Hospital Statistical Committee" was approved by the Executive Council.

USUAL AND CUSTOMARY FEE SURVEY

The chairman of the Usual and Customary Fee Survey Committee reported that 2,016 questionnaires were mailed to Iowa physicians during the third week in November, and that doctors were asked to return them no later than December 15. To date, 1,456 questionnaires had been returned, representing an overall response of 72.1 per cent. Fourteen counties were listed as having less than 50 per cent response: Appanoose, Bremer, Buchanan, Cass, Dickinson, Fayette, Fremont, Henry, Humboldt, Jackson, Lee, Lucas, Plymouth and Warren. Councilors in those areas were requested to urge physicians to return their questionnaires at the earliest possible date.

COMMITTEE ON INDUSTRIAL HEALTH

The Committee on Industrial Health recommended that the IMS continue its policy relative to free choice of physician under workmen's compensation. The current policy is as follows: "In the area of 'free choice of physicians' there is no demonstrable reason for any amendment to the present Workmen's Compensation Law."

A CONGRESS ON MEDICINE AND PHARMACY

It was suggested that the IMS Subcommittee on

Interprofessional Activities, in cooperation with a similar committee of the Iowa Pharmaceutical Association, proceed with the development of a tentative plan for a congress on medicine and pharmacy, and report to the Executive Council in March. The proposed program, as outlined by the joint IMS/IPhA committee, would be educational, and representatives from both medicine and pharmacy would be invited to attend and participate.

AMA-ABA to Sponsor Medicolegal Symposium

One of the largest and most significant meetings on medicine and the law will be held in Las Vegas on March 11-13. Sponsored by the American Medical Association and the American Bar Association, the National Medicolegal Symposium at The Dunes Hotel will feature 41 participants. They include: retired U. S. Supreme Court Justice Charles E. Whittaker; the Honorable Grant Sawyer, Governor of Nevada; Joseph F. Sadusk, Jr., M.D., medical director of the Food and Drug Administration and chairman of AMA's Committee on Medicolegal Problems; four judges; a law school dean; 10 physicians; and 23 attorneys.

Speaking on behalf of the AMA-ABA Liaison Committee, co-chairmen Percy E. Hopkins, M.D., and Thomas Boodell, stated:

"This is the first time that the AMA and the ABA are jointly sponsoring a National Medicolegal Symposium. By combining the resources of our two organizations, we have been able to gather an impressive array of speakers.

"This promises to be one of the largest and most significant medicolegal meetings ever held. It will be a giant step in improving the administration of justice and in promoting harmonious relations between the medical and legal professions."

Justice Whittaker of Kansas City, Mo., will speak on *Self-Discipline—A Right of the Professions* at the Friday, March 12, luncheon.

Gov. Sawyer will present the opening remarks of the symposium, on Thursday, and Dr. Sadusk will speak Saturday morning on the physician's viewpoint when he is sued by a patient.

Wesley W. Hall, M.D., Reno, Nev., a trustee of the AMA will moderate the Thursday afternoon program on *The Physician-Client—What Every Lawyer Should Know*. Robert S. Mauck, Columbus, Ohio, will discuss business problems of a medical practice; Don Harper Mills, M.D., LL.B., Los Angeles, will speak on professional problems of a medical practice, and Los Angeles attorney Arthur B. Willis will discuss tax problems of a medical practice.

A discussion, *The Legal Advisor—What Every Physician Should Know* on Friday morning will be moderated by George M. Fister, M.D., Ogden, Utah, a past president of the AMA. Legal advice on personal and professional matters and the physician's annual legal checkup will be presented by three speakers—Robert B. Murphy, Madison, Wisconsin; C. Dean Davis, Austin, Texas, and Philip Habermann, Madison, Wisconsin. There will be a question and answer period following each of the series of discussions.

The first of three trial vignettes will be presented Friday morning. Taking part will be Judge John C. Mowbray, Las Vegas; Russell S. Fisher, M.D., Baltimore, and Chicago attorneys Philip H. Corboy and Charles M. Rush.

Participants in the Friday afternoon courtroom vignette on *Psychiatry and the Law* will be Judge David Zenoff, Las Vegas; John K. Torrens, M.D., Albuquerque, N. M., and attorneys Louis G. Davidson and Tom L. Yates, both of Chicago. In the Saturday morning vignette on *Trauma and Its Effect,* Judge Kenneth N. Chantry, Los Angeles, will preside. Jurgens H. Bauer, M.D., Las Vegas, will serve as the expert witness, and attorneys will be Donald P. Lay, Omaha, Neb.; Michael R. Gallagher, Cleveland; Newton Gresham, Houston, and John R. McConnell, Philadelphia. Attorneys Albert Averbach, Seneca Falls, N. Y., and John N. Dixon, St. Louis, are serving as technical consultants for the courtroom vignettes.

James H. Berge, M.D., chairman of AMA's Judicial Council, will moderate the Friday afternoon discussion on *Common Goals and Ideals of Law and Medicine*. Speakers will be Francis C. Coleman, M.D., Tampa, Fla., a past chairman of AMA's Council on Legislative Activities, and F. William McCalpin, St. Louis attorney.

Frank F. Fowle, Chicago attorney, will moderate the Saturday morning session. Howard Hassard, San Francisco, executive director of the California Medical Association, will discuss fees for medical witnesses. Participants in the discussion on *What Happens When a Physician Is Sued by a Patient?*, in addition to Dr. Sadusk, will be: Insurance viewpoint, attorney Frederick D. Lewis, Jr., Dean, School of Law, University of Missouri, at Kansas City; medical profession's viewpoint, attorney Frederick B. Lacey, Newark, N. J.; and legal viewpoint, attorney Wayne E. Stichter, Toledo, Ohio.

Recent landmark medicolegal decisions will be summarized by Cleveland attorney R. Crawford Morris. The summation of the symposium will be presented by Mr. Boodell.

Advance registrations for the symposium may be made by writing directly to Robert B. Throckmorton, general counsel, American Medical Association, 535 North Dearborn, Chicago, Illinois 60610. The advance registration fee of $25 covers the cost of the luncheon, a reception and a copy of the proceedings. The check should be made out to the American Medical Association. Registrants are to make their own hotel reservations.

Coming Meetings

IN STATE

Mar. 10-11 **Mental Health of the Older Adult**, University of Iowa Psychopathic Hospital, Iowa City.

Mar. 17 **Infertility and Endocrinology**, U. of I. College of Medicine, Iowa City.

Apr. 8-9 **Pediatric Conference**, Raymond Blank Memorial Hospital Assn., School of Nursing Auditorium, Iowa Methodist Hospital, Des Moines.

Apr. 11-14 **Iowa Medical Society Annual Meeting**, Hotels Fort Des Moines and Savery, Des Moines.

Apr. 23-24 **Trauma of the Head and Neck**, U. of I. College of Medicine, Iowa City.

CONTINENTAL U. S.

Mar. 1-5 **American College of Physicians, Molecular Biology and Clinical Medicine**, Philadelphia General Hospital, Philadelphia.

Mar. 3-5 **Management of Trauma**, University of Colorado School of Medicine, Denver.

Mar. 5-11 **1965 Loma Linda University School of Medicine Alumni Postgraduate Convention**, Ambassador Hotel, Los Angeles.

Mar. 7 **American College of Gastroenterology Southern Regional Meeting**, Roosevelt Hotel, New Orleans.

Mar. 8 **Closed Chest Cardiac Resuscitation**, University of Nebraska College of Medicine, Omaha.

Mar. 8-10 **Pediatrics**, University of Kansas Medical Center, Battenfeld Auditorium, Kansas City, Kansas.

Mar. 8-11 **Annual Sectional Meeting for Doctors and Graduate Nurses**, American College of Surgeons, Olympia Hotel, Seattle.

Mar. 8-12 **American College of Physicians—Recent Advances in Cardiovascular Disease**, Mt. Sinai Hospital, New York City.

Mar. 10-14 **Diabetes Institute. Colorado Diabetes Association**, Aspen Meadows, Aspen, Colorado.

Mar. 11-13 **1965 National Medicolegal Symposium**, Dunes Hotel, Las Vegas.

Mar. 15-17 **Clinical Reviews, Mayo Clinic and Mayo Foundation**, Mayo Civic Auditorium, Rochester, Minn.

Mar. 15-19 **Medical Technology**, University of Colorado School of Medicine, Denver.

Mar. 15-19 **American College of Physicians—Cardiology**, Emory University School of Medicine, Atlanta, Georgia.

Mar. 17-20 **Arizona Cancer Seminar**, Pioneer Hotel, Tucson, Ariz.

Mar. 22-24 **Clinical Reviews, Mayo Clinic and Mayo Foundation**, Mayo Civic Auditorium, Rochester, Minn.

Mar. 22-25 **Surgery**, University of Kansas Medical Center, Battenfeld Auditorium, Kansas City, Kansas.

Mar. 22-26 **Golden Anniversary Session of the American College of Physicians**, Conrad Hilton Hotel, Chicago.

Mar. 24-26 **1965 Sight-Saving Conference of the National Society for Prevention of Blindness, Inc.**, Rice Hotel, Houston, Texas.

Mar. 25-27 **Mid-Central States Orthopaedic Society**, Valda Rose Motel, Hot Springs.

Mar. 26-27 **18th National Conference on Rural Health**, Americana Hotel, Miami Beach.

Mar. 29-Apr. 10 **Postgraduate Course—Laryngology and Bronchoesophagology**, University of Illinois College of Medicine Medical Center, Chicago.

Mar. 31-Apr. 2 **Symposium on Gastroenterology**, Medical College of Georgia, Augusta, Georgia.

Apr. 2-4 **21st Annual Meeting, American Society for the Study of Sterility**, Jack Tar Hotel, San Francisco.

Apr. 3 **Seminar in Diseases of the Nervous System**, Clinical and Pathological Considerations, Missouri Society of Pathologists, St. Louis.

Apr. 4-8 **American College of Obstetricians and Gynecologists 13th Annual Clinical Meeting**, Civic Auditorium, San Francisco.

Apr. 5-6 **Pediatrics**, University of Nebraska College of Medicine, Omaha.

Apr. 5-8 **American Industrial Health Conference**, Americana Hotel, Bal Harbour, Fla.

Apr. 5-8 **38th Annual Spring Congress in Ophthalmology**, Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va.

Apr. 5-9 **Nuclear Medicine for the Internist, American of Physicians**, Johns Hopkins Hospital, Baltimore.

Apr. 12-16 **17th Annual Scientific Assembly of the American Academy of General Practice**, Civic Auditorium, San Francisco.

Apr. 15-17 **Clinical Dermatology**, University of Colorado School of Medicine, Denver.

Apr. 26-27 **AMA's Second Congress on Environmental Health Problems**, Drake Hotel, Chicago.

Apr. 26-29 **Mechanisms and Therapy of Cardiac Arrhythmias**, Hahnemann Medical College and Hospital, Sheraton Hotel, Philadelphia.

Apr. 26-29 **Aerospace Medical Association**, New York Hilton, New York City.

Apr. 26-30 **Cardiopulmonary Diseases, American College of Physicians**, University of Colorado Medical Center, Denver.

Apr. 26-May 1 **American Board of Obstetrics and Gynecology**, Part II Examination, Edgewater Beach Hotel, Chicago.

Apr. 28-May 1 **Ninth Postgraduate Course in Trauma**, Chicago Committee on Trauma of the American College of Surgeons, John B. Murphy Memorial Auditorium, Chicago.

ABROAD

Mar. 28-30 **Fourth Symposium and Exhibition, International College of Experimental Dermatology**, Palermo, Italy.

Apr. 17-19 **American Academy of General Practice, 1965 Invitational Scientific Congress**, Honolulu, Hawaii.

May 24-26 **Current Concepts in Gastroenterology—American College of Physicians**, Royal Victoria Hospital, Montreal, Quebec.

May 24-27 **Fifth International Thyroid Conference**, Rome, Italy.

July 28-31 **Second International Congress of Psychosomatic Medicine in Obstetrics and Gynecology**, Vienna, Austria.

Aug. 8-14 **Eighth International Anatomical Congress**, Wiesbaden, Germany.

Actions of AMA House of Delegates

Special Session—Chicago, February 6-7, 1965

F. J. L. BLASINGAME, M.D.
Executive Vice-President

At a two-day special session in Chicago to review current health care legislation, the House of Delegates of the American Medical Association gave unanimous approval and support to the AMA Eldercare program and to the Herlong-Curtis Eldercare Bill (H.R. 3727), which embodies the basic principles of the AMA program.

In acting upon six resolutions and reports from the AMA Board of Trustees, Council on Legislative Activities and Council on Medical Service, the House of Delegates also:

1. Reaffirmed its opposition to the King-Anderson Bill (H.R. 1 and S. 1) and all similar measures;
2. Commended the Board of Trustees and its task force for implementing and funding a program of public education on the AMA Eldercare program and gave them a standing vote of confidence;
3. Called for study of the "desirability and feasibility of extending the principle of federal and state aid under the Kerr-Mills principle to persons below the age of 65 who need help";
4. Adopted a statement on Standards for Health Care Programs, and
5. Urged that the professional services of pathologists, radiologists, physiatrists and anesthesiologists should be excluded from the provisions of any bill which excludes other physicians' services.

AMA ELDERCARE PROGRAM

First announced on January 9 by AMA President Donovan F. Ward, at the Association's Kerr-Mills Conference in Chicago, the AMA Eldercare program would encourage the use of voluntary health insurance or prepayment plans in the implementation of Kerr-Mills programs, permit the state to have a health-oriented agency supervise or administer the program, provide for use of an income information statement as the sole eligibility test of need, and provide for a wide spectrum of medical, surgical and hospital benefits with sliding-scale eligibility so that a citizen 65 and over would pay all, part or none of the cost of the insurance or prepayment policy, depending on his income.

These principles are incorporated in the Eldercare Act of 1965, introduced on January 27 by Representatives A. Sydney Herlong, Jr. (D., Fla.), and Thomas B. Curtis (R., Mo.), amending the Kerr-Mills law to authorize broad health insurance coverage for elderly persons.

The Herlong-Curtis Bill would authorize federal grants to the states on a matching basis to help persons 65 years of age and older pay the costs of the health insurance or prepayment policy if they could not afford it otherwise. The bill would provide for utilization of Blue Shield and Blue Cross plans and private health insurance companies.

The cost of such coverage would be borne entirely by government for those elderly individuals whose income falls below limits set by each state. For individuals with incomes between the minimum and a maximum, government would pay a part of the cost on a sliding scale according to income. Individuals with income above the maximum would pay the entire cost, but they would have the benefit of an income tax deduction for such payments.

Persons under 65 years of age also would be given an income tax deduction for the amount of premiums paid on health insurance policies for elderly relatives.

DR. WARD'S ADDRESS

Condemning the King-Anderson bill and urging support of the Eldercare program, Dr. Ward told the House on the first day of the Special Session:

"Are 200,000 doctors wrong in urging the Congress to give serious consideration to the one measure now before it that offers genuine medical and hospital benefits to the needy aged? This is a bill authored neither by the Republican party nor the Democratic party. It is a bill with bipartisan parentage—the Herlong-Curtis Eldercare Bill, numbered H.R. 3727. We urge Congress to compare, and the people to compare, this bill with its genuine benefits and realistic financing—and with its provision allowing for administering a health program through health agencies of the states—to compare it feature-by-feature with Medicare.

"If the drums can be stilled long enough to

make this comparison, it will be found that the Herlong-Curtis Eldercare Bill can cover not only the cost of hospital care and nursing homes for the aged, but also payment of physicians and surgical and drug costs—which Medicare would not do."

Dr. Ward declared that "it is never too late to pass good legislation and defeat bad legislation. The one thing in this historic decision—the only thing—that may truly come too late, is regret."

EDUCATION PROGRAM

Dr. Percy E. Hopkins, chairman of the Board of Trustees, reported to the House that the AMA's current effort to tell its story to the people and to the Congress is being financed through the allocation of a portion of the Association's reserve fund. In response to a number of questions raised during the open discussions, the delegates also were told that the education program will not require a dues increase or a special assessment. The program will be national in scope—involving magazines, radio and television—but maximum grass roots effort was urged upon the entire AMA membership and the Woman's Auxiliaries.

HEALTH CARE LEGISLATION

Declaring that "it is essential that the position of the AMA be made clearly apparent while at the same time remaining responsive and flexible in legislative developments," the House passed a resolution reaffirming earlier positions established on federal medical care programs.

Specifically included was the reaffirmation of the policy established by the House of Delegates at the 1964 Clinical Convention, which urged component associations to stimulate state and local governments to seek the fullest possible implementation of existing mechanisms, including the voluntary health insurance principle, to the end that everyone in need, regardless of age, is assured that necessary health care is available.

The House defeated a motion that "a medical and hospital service plan with minimum benefits specified, one and the same across the nation from the point of view of the benefits offered, be prepared to accompany H.R. 3727" (the Herlong-Curtis Eldercare Bill).

The House tabled that portion of the report of the Reference Committee on Legislation and Public Relations dealing with Resolutions No. 3 and No. 5, both of which called for the AMA to propose legislation which would extend health insurance coverage to all *needy* persons regardless of age.

In considering this proposal, the House adopted Resolution No. 7, introduced by California, one portion of which asked that "the AMA Board of Trustees, the Council on Medical Service and the Council on Legislative Activities (a) study the desirability and feasibility of extending the principle of federal and state aid under the Kerr-Mills principle to persons below the age of 65 who need help and (b) report their recommendations as early as possible to the AMA Board of Trustees and House of Delegates as a basis for formulation of future AMA policy in this regard."

After adopting the California resolution, the House voted not to "lift from the table" the portion of the Reference Committee Report dealing with Resolutions No. 3 (Indiana) and No. 5 (Michigan).

STANDARDS FOR HEALTH CARE PROGRAMS

The House adopted the following principles as essential to sound health care programs:

1. No person needing health care shall be denied such care because of inability to pay for it.
2. It is appropriate that government revenues be used to finance health care when other resources have been found to be inadequate.
3. Every level of government (municipal, county, state and federal) should assume a responsible share in the financing of such programs.
4. The health care provided by such programs should be adequate and should be equal in quality to that available to those who can afford to pay.
5. Maximum use should be made of voluntary prepayment and insurance mechanisms.
6. Administration of such a program should be the responsibility of the state government. Participating states should be required to meet adequate standards of administration in order to qualify for federal funds.
7. Eligibility requirements for benefits should be fair, realistic, uncomplicated and practical.
8. Any such health care program should provide funds only, and not direct services.
9. Funds for such programs should come from general tax revenues and not from Social Security taxes.

MEDICAL SERVICE REPORT

In approving the report of the Council on Medical Service, the House adopted the following statement:

"The Council believes it is important for the profession to note that, while suggested mechanisms for providing health care to the needy have changed as the nation's social and economic structure has changed, the basic underlying concepts of the American Medical Association, upon which our policy statements have been made, have not changed.

"While the Council is concerned with the availability and accessibility of health care for all citizens, it has long recognized that certain groups have health problems disproportionate to those of the general population. Included are the impoverished of all ages—the mother and newborn, the crippled child, the blind, the mentally ill, the mentally retarded, the long-term chronically ill, the physically disabled, and the aged."

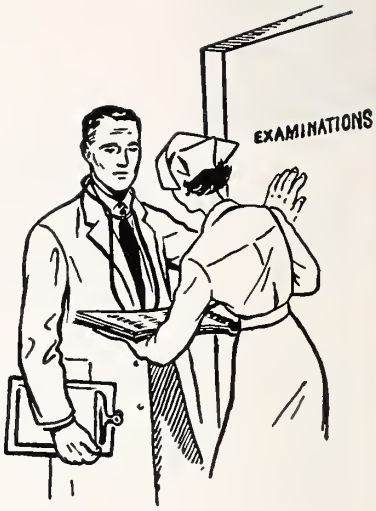
Iowa Chapter of the American Academy of General Practice

SEVENTEENTH ANNUAL AAGP SCIENTIFIC ASSEMBLY

Civic Auditorium, San Francisco

Hour	Monday April 12	Tuesday April 13	Wednesday April 14	Thursday April 15	Friday April 16
9:00 a.m.	Registration	"Acute Chest Trauma—Emergency Treatment" Donald B. Effler, M.D.	Clinical Refresher Course	"Retarding the Aging Process" Frederick C. Swartz, M.D.	"Office Plastic Surgery," Charles E. Horton, M. D.
9:30 a.m.		"Pitfalls in Surgery of the Biliary Tract" Kenneth W. Warren, M.D.		"Geriatric Preoperative Evaluation" Ernest P. Guy, M.D.	"Post-surgical Embolic Disease" Victor Richards, M.D.
10:00 a.m.	Clinical Refresher Course	Recess		Recess	Recess
11:00 a.m.		"Principles of Topical Management of Cutaneous Disease" Eldred B. Heisel, M.D.		"Treatment of Hip Fractures" Donald B. Lucas, M.D. "Hip-Fracture Rehabilitation" F. W. Brow, M.D.	Panel on Population Control, F. P. Rhoades, M.D., moderator, and E. Rice-Way, M.D. and A. F. Guttmacher, M.D.
Noon Recess					Program ends at noon on Friday. Exhibit halls close at 12:30.
1:30 p.m.	Symposium on Alcoholism A. Auerback, M.D., R. G. Bell, M.D., Mrs. Cathrin Peltenburg	Symposium on Ob-Gyn., Carl Hall, M.D., W. L. Fielding, M.D., W. J. Reich, M.D.	Symposium on Pediatric Bronchopulmonary Disease, H. C. Shirkey, M.D., F. H. Douglass, M.D., C. M. Tepper, M.D.	Panel on Medical Problems of Adolescence, J. C. Redman, M.D., H. Missildine, M.D., J. R. Gallagher, M.D., A. Roth, M.D.	
3:00 p.m.	Recess for Exhibits	Recess for Exhibits	Recess for Exhibits	Recess for Exhibits	
4:00 p.m.	"Emotional Pitfalls in the Doctor-Patient Relationship" B. H. Hall, M.D.	"Hazards of Pesticides" Irma West, M.D.	"Differentiation of Pulmonary Mycoses from Bacterial Infections," J. H. Seabury, M.D.	"The Family Doctor's Role in Clinical Drug Investigation," T. G. Klumpp, M.D.	
4:30 p.m.	"Treatment of the Chronically Anxious Patient" H. A. Dickel, M.D.	"Physiology of Work" J. L. Norris, M.D.	"Tropical Disease in the Temperate Zone," M. T. Hoekenga, M.D.	"Recent Developments in Allergy and Hypersensitivity," S. Feinberg, M.D.	

THE DOCTOR'S BUSINESS



Partnership Disability

HOWARD D. BAKER
Waterloo

Several months ago, we discussed "Partnership Retirement" on this page. The theme on which we insisted was that retirement provisions, beyond the value of the retired partner's assets and accounts receivable, are basically the financial responsibility of the individual partner, rather than the collective responsibility of the partnership.

If it is agreed that the primary goals of a partnership should be high quality of practice and maximum ease of practice, there is little logic in requiring a partnership to assume economic responsibility for providing either retirement or disability income to its members. On the contrary, the ill-advised assumption of such financial responsibilities by a partnership may prove to be a complete financial impossibility.

We have read proposals for the funding of disability through a partnership. They are designed to provide various benefits, ranging all the way from a few months' protection to a lifetime indemnity. Some of the long-term proposals include funding by insurance after a certain period of time.

Simply analyzed, long-term disability protection funded out of earnings is economically impossible, since it must come from reductions in the earnings of all the partners. Disability insurance purchased through the partnership is impractical, since there is no tax advantage and since each partner ends up paying his own cost. The major disadvantage of an insured plan is that several partners may be required to buy insurance of amounts and types, and from companies, that would not be their individual choices in personal programs. In our opinion, the only valid approach to partnership responsibility for disability protection is a program that will provide a smooth transition for the disabled partner until his insurance program takes over, and one which gives realistic recognition to the financial equity of the disabled partner and the earnings of the partners who are to remain active.

The commonest disability arrangement is one that provides a guaranteed continuation of income for the first three to 12 months of a partner's disability. For example, it may provide three months at 100 per cent; three months at 75 per cent; three months at 50 per cent; and three months at 25 per cent. At the end of that last period, the disabled partner's status must be appraised. If it seems likely that his disability will be long-term or permanent, his interest will usually be terminated. If it appears that he will return to work within a reasonable period, his participation can be "suspended" until he returns.

Whatever the final specific provisions, partnership indemnity must represent realistic *interim* income, to be replaced by the disabled partner's individual insurance program for long-term protection.

An excellent thing to do in considering problems such as this is for each partner to visualize himself, successively, in the position of the disabled individual and in the position of one of those remaining active, and to weigh all contingencies. If a proposal can survive that test, and if all partners agree to the logic of being the *payer* as well as the *recipient*, then the plan may have merit.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Meeting of the

IMS NOMINATING COMMITTEE

1:30 p.m., Sunday, March 7

IMS Headquarters, Des Moines

Meetings of the Nominating Committee are open to all members of the IMS in good standing, except when the Committee goes into executive session.

Iowa Association of Medical Assistants

Aid From the Aide

From time to time we have discussed methods of saving time, conserving energy and planning work—always with the medical assistant in mind. Now we'd like to suggest some ways in which you can save your doctor some time and perhaps cut down on his work load. Incidentally, these suggestions will mean more work for you, but in the time he saves by allowing you to take care of several telephone calls or replies to correspondence, he may be able to see one or two more patients a day.

Most doctors complain about their lack of time for reading current medical publications and scientific articles of interest to them. How much time does your doctor spend returning telephone calls that you could have taken care of *with the proper instructions from him?* Fifteen minutes a day? He could have read a medical article in that length of time!

Mrs. Jones comes to your office with a sore throat; your doctor treats her symptoms and takes a throat culture to be sent to the laboratory which does his work. When the report is returned to your office, what becomes of it? Is it filed with the patient's record until she becomes curious and calls in for the results? Has Mrs. Jones' telephone number been noted on the report, and have the report and record been placed on Dr. Smith's desk? Has Mrs. Jones been instructed to call in at a specified time to receive the report? Or, have you been instructed to call Mrs. Jones, ask how she is feeling, and tell her that the report was negative, or that the culture showed a streptococcal infection and that Dr. Smith would like her to have her prescription refilled and remain on medication for a total of 10 days? The latter method not only is more efficient but lets the patient know that your office is interested in her welfare.

Mabel Black called to ask if she could have a refill of her prescription. Did you ask for the date of the prescription, the pharmacy that filled it, the number of the prescription, and her telephone number? These pieces of information and Mrs. Black's record will enable the doctor to tell very quickly whether or not he wants her to refill the prescription, and will enable him to make the necessary arrangements with the pharmacist and/or Mrs. Black. The doctor may prefer to make the calls personally, but you have saved his time by getting information beforehand.

Occasionally a patient moves from your community to another and asks that her records be sent to the doctor who will be taking care of her and her family. This does not mean that she wants a report of each of her visits to your office; she wants a BRIEF résumé for her illnesses and treatments that it would be important for another doctor to know. Also, insurance companies ask for brief reports of past illnesses of applicants, or of the specific treatment given for an illness reported to them in an applicant's history. If you are able to make a narrative report or answer specific questions from the material in the patient's record and if you have it ready for the doctor's signature, you will have saved him not only the time spent in gathering the information, but the time it would require him to write or dictate the information. A pencilled notation on the margin of the inquiry will refresh the doctor's memory and can be erased later.

The doctor may instruct you to answer letters for him by making similar notes on the letters to be answered. You are familiar with his style of writing, and thus can save him some more time. For instance, your doctor may get an invitation to speak at a luncheon meeting. He is interested in the organization extending the invitation, and would like to accept. He asks you to answer the letter, and you do it by thanking the writer for the invitation, saying that you (i.e., the doctor) are happy to accept, and repeating the date, time and place of the meeting. Or, you decline with regret stating that you (the doctor) will be attending a postgraduate conference at the University of Iowa on the date of the luncheon. In either

1965 ANNUAL IAMA MEETING

MAY 14-15-16

HOTEL HANFORD

MASON CITY

"A TRIP AROUND THE WORLD"

case, the letter should be written as though the doctor had dictated the reply to you.

Don't be afraid to ask your doctor about your work, or to find out how he wants things done. He may have procedures that are standard for him but are different than those to which you have been accustomed. If he asks you for an opinion or a suggestion, he asks because he values your judgment. Don't waste his time with trivialities, gossip or excuses. Use your own resourcefulness and initiative without overstepping bounds. Above all, listen to your doctor; he is the boss!

Being a medical assistant is a service job; the work is not always easy, but it is well worth the effort expended. It takes good health, good judgment, a sense of humor, and a love and understanding of people—especially people in trouble. But its greatest rewards are your satisfaction in a job well done, and the sincere appreciation of your doctor and his patients.

HELEN G. HUGHES

Recommendations From the Academy of Pediatrics

PHENYLKETONURIA

The American Academy of Pediatrics has recommended that all newborn infants be tested for phenylketonuria (PKU), an inherited metabolic disorder that causes mental retardation, before they are discharged from the hospital.

The blood test must not, however, be performed until after the infant has been on milk feedings for 24 hours. Two types of blood tests are available—one is a bacteriological assay (the Guthrie test) and the other includes chemical procedures. The recommendation, made by the Academy's Committee on Fetus and Newborn, was reported in the January NEWS LETTER for Academy members.

The Committee also recommended that the urine of all newborn infants be tested for inherited metabolic disorders that interfere with the body's ability to utilize certain types of sugar—galactose (found in milk sugar) and fructose (found in fruits and table sugar)—which may lead to retardation or death.

Commenting on the statement, E. H. Christopherson, M.D., executive director of the Academy, noted that his organization takes no position on making screening tests mandatory by state law, although a few states have passed such laws on PKU testing. "The Academy believes that passing laws requiring screening tests or any other procedure is not an effective method for improving health care services," Dr. Christopherson said. "Rather the Academy believes that such procedures are best worked out cooperatively on a local level—by physicians, hospitals, and health departments."

Concerning phenylketonuria, the Committee also recommended that a second blood test be performed at four or six weeks of age to detect infants who had borderline or low levels of phenylalanine in the first few days of life. It will also confirm a positive initial test.

PKU is characterized by the lack of an enzyme needed to break down phenylalanine, an amino acid found in proteins. When the enzyme is missing, the partially metabolized products of phenylalanine (phenylketones) build up in the blood. Brain damage and mental retardation result. When the defect is discovered early, the infant can be placed on a special diet low in phenylalanine and retardation prevented.

The Committee noted that particular attention should be given to infants born into families in which another member is already known to have PKU. These infants should be tested daily during the hospital stay. If the results are negative at discharge, the infant should be tested at one, two and six weeks of age.

Because of the difficulty of interpreting blood tests and the hazards of unwarranted dietary restrictions, the Committee recommended that the screening tests be performed "in a large central facility, such as a state health department, or at least regional, laboratory."

"Only a very large facility will experience a sufficiently large number of tests positive for this rare disorder to acquire skill in diagnosis," the Committee said, adding that the laboratory should have a close working relationship with a medical center where the diagnosis can be confirmed, the treatment diet chemically monitored, and the therapy supervised.

Concerning the disorders involving galactose and fructose, the Committee noted that they will not be detected in infants who have not been exposed to the substances in their diets; thus infants must be given feedings with the substances before urine tests are carried out—preferably on the day of discharge from the hospital.

In galactosemia and fructosemia, the body is unable to metabolize galactose and fructose into glucose, the basic sugar used for energy. Treatment of the disorder consists of placing the infant on a diet free of the particular type of sugar.

Infants in families of known galactosemics must be placed on a lactose-free milk substitute until galactosemia can be ruled out through blood tests, the Committee said.

The Committee noted that at the present time, screening tests for other metabolic diseases, such as maple-syrup urine disease and cystic fibrosis, are not ready for application to all infants. However, infants born into families in which an inherited metabolic disorder has been recognized previously should be carefully evaluated and tested.

It also urged that large scale research-oriented screening programs be undertaken at several centers to evaluate various testing methods and to learn more about the incidence and natural history of a large number of inheritable metabolic diseases.

GAMMA GLOBULIN FOR RUBELLA PROPHYLAXIS

Serious doubt concerning the usefulness of gamma globulin as a means of preventing rubella (German measles) among pregnant women has been expressed by the American Academy of Pediatrics. Two Committees—on the Control of Infectious Diseases and on Congenital Malformations—in a joint statement advised physicians that they should make decisions and recommendations for the management of pregnant women exposed to German measles "on the assumption that there is still no firm evidence that immune globulin is effective in reducing the risk of congenital anomalies." The statement appeared in the January NEWS LETTER for Academy members.

German measles infection during the first three months of pregnancy can cause severe damage to the unborn infant. Injection of gamma globulin (the protein fraction of the blood containing many of the immune substances that circulate in the blood) has been used with the thought that it may prevent infection or at least reduce the severity of the infection, thereby reducing the chances of damage to the infant.

Noting that the 1963-1964 epidemic of rubella provoked the need for reviewing recommendations about the use of human immune globulin, the Committees said, "In the absence of definitive data to support or reject its use, physicians have continued to use it in the hope that a few malformations might be prevented. This creates an acute shortage of human immune globulin in epidemic years, involves a useless expense for families if it is not effective, and diverts the product from other diseases where it is of established value."

Recent experimental studies involving blood tests and virus isolation from patients injected with immune globulin and rubella virus "suggests that immune globulin may suppress only the clinical manifestations of rubella without preventing the occurrence of infection or viremia," the Committees said. "It has not been established whether such viremia, in the absence of other manifestations of rubella in the first trimester of pregnancy, can be associated with fetal damage."

Thus the Committees concluded that "there is less reason than before to justify the use of immune globulin for susceptible women exposed to rubella during the first trimester of pregnancy."

The Academy's previous statement on the control of rubella appeared in the REPORT OF THE COMMITTEE ON THE CONTROL OF INFECTIOUS DISEASES, published in January 1964. It said, "Prevention of German measles with human immune globulin may be attempted in susceptible women exposed during the first trimester of pregnancy. The dose should be 20 ml. injected intramuscularly. The protective effect is uncertain and unreliable."

Civil Defense Notes

A breakdown on January 28 in a Federal electrical generator unit, which obtains its power from the Randall Dam on the Missouri River in South Dakota, resulted in an almost total power blackout in the State of Iowa and portions of Nebraska, South Dakota, Minnesota, Illinois, and Missouri.

When the power failure occurred at 1:30 p.m. in Des Moines, Director Stiles immediately contacted Iowa Power and Light and obtained the basic information as to the cause. It was fortunate this contact was made quickly as the power company's switchboard was soon flooded with calls and telephone contact was almost impossible.

Our RACES base station was activated along with the new Highway Commission base station, and it was quickly determined that the outage was a massive one covering almost the entire state as John Place, state communications officer, and Dr. Wayland W. Osborn, whose normal duties are with the State Department of Public Instruction but who had just been appointed RACES Radio Officer for the Iowa Civil Defense Administration, went into action.

A report was made to Region VI over NACOM I, but when this circuit became overloaded, NACOM II was quickly and easily pressed into service. This powerful radio unit enabled us to maintain contact with Region VI, and the latter then responded to our request that emergency generators be made available from the Federal Depot at Hampton, Iowa, in the event such an emergency request should materialize.

Director Stiles later went on the air over WHO through a phone patch from his office and explained the situation to the public including in this information a request that phone lines be kept clear except for emergency calls, the usage of battery-powered radios by citizens to obtain the latest information, and other suggestions as might be applicable to the general public under these most unusual circumstances.

It should be pointed out that light and power for the State's EOC and the telephone office in the State Office Building would not have been maintained if we had not completed the installation of the long-awaited 50 KW emergency generator, which provided us with lights and the power to activate our radio communications. Not only did this enable the State Office to keep completely

abreast of the situation but to provide accurate, factual information to the press and radio media. WHO was the only station on the air because that organization had emergency power. A second 50 KW generator will be in action here when some repairs and installation requirements have been completed.

The populace as a whole accepted the situation calmly and were only inconvenienced, although the tire making companies reported substantial losses as the tires in the electrical tire making machines had to be discarded. It all emphasized the necessity of emergency preparedness and, in this instance, the absolute necessity of the availability of emergency power for communications and other requirements. Fortunately, the Iowa Civil Defense Administration was prepared.

. . . AND ON THE FOLLOWING DAY . . .

The communications preparedness and the availability of trained staff of the Iowa Civil Defense Administration was again most apparent on the day following the 5-state power outage when a goodly portion of the Des Moines General Hospital, which is about two blocks from the State Offices, was destroyed by fire. About 82 patients and 80 employees were transferred to a nearby church and thence to other hospitals by ambulance without loss of life despite the fact that surgery was underway and a baby was being born when the fire broke out.

Responding to the order of Governor Harold Hughes, Director Stiles arranged with the National Guard for the providing of six additional ambulances, cots and blankets, and the Guard's response was fast and efficient. Director Stiles directed John Place, State CD communications officer, to activate our RACES base station, and all messages transmitted by "Ham" operators and others with the same equipment at the fire were monitored. It was through this operation that Director Stiles was quickly able to transmit a request to Dr. Milton J. Dakovich, President of the Polk County Society of Osteopathic Physicians and Surgeons, that additional doctors and nurses were needed at the Doctors Hospital, and 14 nurses and doctors responded immediately. The State CD office was notified almost immediately, when the fire broke out, and Deputy Director Garland Morison was dispatched to the scene immediately to provide a report to Director Stiles. Liaison Officer Frank Moyer was also sent to the scene, and telephone communication was maintained to the State Office. Sixty blankets were furnished to Doctors Hospital from the National Guard through this arrangement, and, later, under Director Stiles direction, the National Guard was released as soon as it became apparent that their services were no longer required. Some equipment from the emergency hospital stored at Dahl's Supermarket at 86th and Hickman was also available and held in reserve until it was determined no additional equipment was required. This equipment was transported by Bruce Motor Freight along with an empty truck in the event it might be needed. This firm was most cooperative and certainly should be commended for their invaluable service.

Revised Manual of Standards for Ob-Gyn

The second edition of the MANUAL OF STANDARDS IN OBSTETRIC-GYNECOLOGIC PRACTICE will be published March 1 by The American College of Obstetricians and Gynecologists. The manual is more comprehensive and three times greater in volume than its predecessor, the first edition, which was published in 1959.

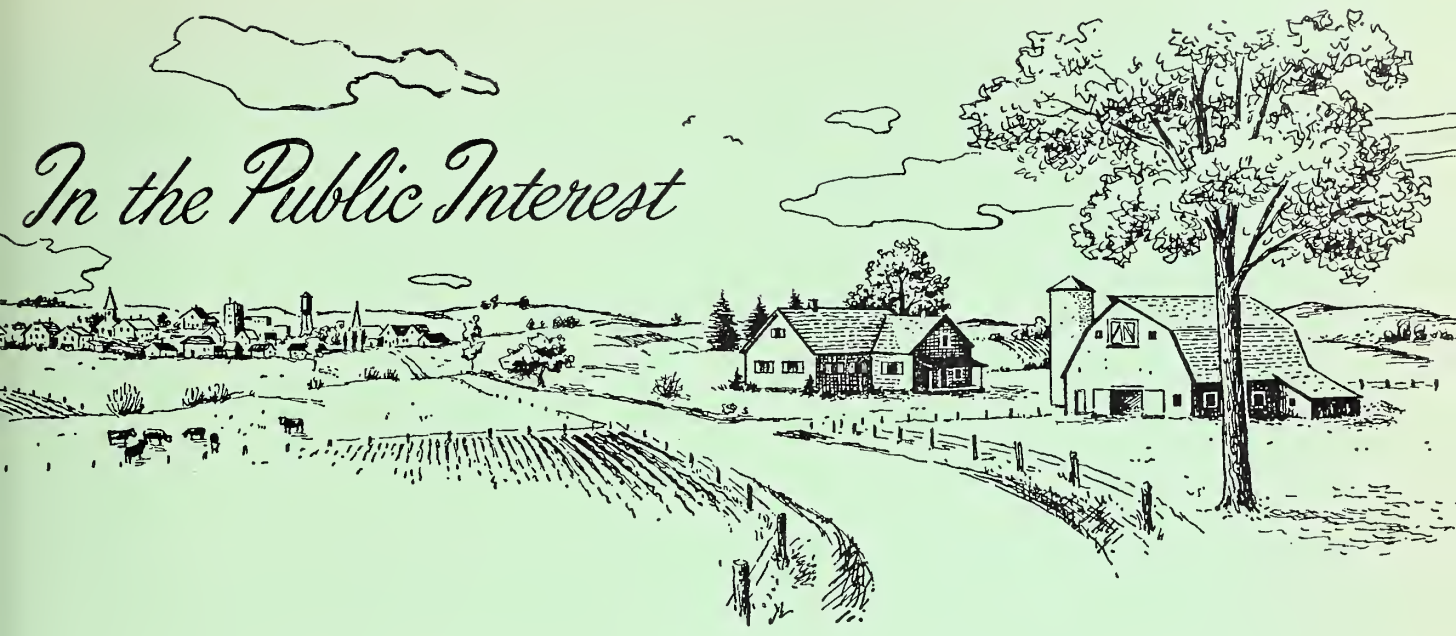
Compiled by the College's Committee on Professional Standards, with the cooperation of the Standards Committee of the American Association for Maternal and Child Health, numerous fellows of the College, and other physicians, the MANUAL is designed for physicians, nurses, hospital administrators, and other personnel as a guide in providing proper facilities and good quality care for obstetric and gynecologic patients.

The MANUAL represents a compilation of recommendations and is not intended to be a rigid set of inviolate rules. Its authors have endeavored to codify what is currently regarded as proper obstetric-gynecologic care in well-organized hospitals throughout the country, with the realization that recommendations are subject to alteration by local conditions.

Included in the second edition are suggestions covering hospital facilities, equipment, and personnel; departmental organization; standards of prenatal, intrapartum, postpartum, and in-patient nursing care; standards of gynecologic practice; recommendation and referral; and radiation precautions.

Moreover, the MANUAL contains five appendices with recommendations on how to maintain satisfactory hospital records; what data should be collected; and the design of useful and complete forms. Definitions of terms and a list of reference works are also included.

The MANUAL will be distributed gratis to all fellows and junior fellows early in March. Cost to non-fellows is $2.50 per copy with a 10 per cent discount on orders of 25 copies or more. Orders, accompanied by check or money order, are now being accepted by the College, 79 West Monroe, Chicago, Illinois 60603.



Every Doctor's Wife Should Be a Member of

The Woman's Auxiliary to the Iowa Medical Society

The Woman's Auxiliary to the Iowa Medical Society recently exceeded half the size of its sponsoring organization, and it should grow a great deal further, since it performs a great number of highly essential services and gives its members a real sense of accomplishment. Currently, its enrollment totals 1,442, if the members of the Auxiliary to the chapter of the Student American Medical Association at Iowa City are included. Thirty-seven local Auxiliaries are now active in 39 Iowa counties, and there are "members-at-large" in each of the others.

The Woman's Auxiliaries have a social function, and quite properly so, for doctors' wives have a great deal in common and enjoy one another's company. Moreover, strengthened friendships among doctors' wives can sometimes lead to closer cooperation among doctors, and consequent improvements in patient care. But in addition, Auxiliary members study the public issues that are of importance to the medical profession, and they work at informing themselves about the health problems of their communities and at finding ways of helping to correct them.

At the State Auxiliary's annual convention, which is to be held at the Kirkwood Hotel, in Des Moines, on April 12 and 13, concurrently with the IMS annual meeting, there is to be a showing of spring fur fashions by one of the Des Moines merchants, but far more time will be devoted to exchanges of ideas on projects and program topics for future county Auxiliary meetings. In addition —exemplifying the seriousness of the Auxiliary's purposes—the members and guests are to hear a presentation by Mr. Frank Woolley, a field representative of the AMA, on "What's Happening in Washington," a discussion by Mr. Robert B. Throckmorton, general counsel of the AMA, on "Medical Ethics for Doctors' Wives," and a panel on "The Physician, the Clergyman and the Terminal Patient," in which Paul McCleave, D.D., head of the AMA Department of Medicine and Religion, R. D. Liechty, M.D., a U. of I. surgeon, Paul Cash, M.D., a Des Moines psychiatrist, and three Des Moines clergymen will participate.

Doctor, if your wife isn't already an Auxiliary member, and if she can come with you to the IMS annual meeting next month, please encourage her to attend the Auxiliary's convention. All physicians' wives will be welcome, and she is sure to enjoy herself there. The complete program can be found in the WOMAN'S AUXILIARY NEWS section of this month's JOURNAL.

CURRENT STATE AND LOCAL PROJECTS

With the approval of the medical societies with which they are affiliated, the local and State Auxiliaries engage in numerous public-service activities. Most of them were designed at the national level

and are common to groups throughout the country, but some are just statewide, and a few are strictly local.

In the area of paramedical-careers recruitment, the Auxiliary is especially diligent. It helps to organize and assist high-school Future Nurse Clubs or Health Career Clubs, in an effort to encourage youngsters to choose nursing, physical therapy or one of the medical technologies as a life work. There are about 60 such clubs in Iowa, and in some instances the Auxiliary shares responsibility for them with the Iowa League for Nursing, as well as with the faculty sponsors. At three or four centers scattered throughout the state, each year, the Auxiliary cooperates with large hospitals in presenting programs and tours of facilities for representatives of the clubs, and it provides transportation and supervision for the girls and boys. On a few occasions, these meetings have been conducted at collegiate schools of nursing and technology.

The State Auxiliary is one of several organizations represented on the Health Careers Council, the principal function of which is to distribute health-vocational leaflets and other information to high school counsellors and interested students. At fairs, either a local or the state Auxiliary has helped maintain booths for the distribution of these materials.

The State Auxiliary operates a Health Education Loan Fund now totaling in excess of $15,000, built up in large measure from the proceeds of annual benefit dances held at the time of the IMS annual meeting. A portion of the annual dues of each Auxiliary member also helps to augment it. Thus far, the Health Education Loan Fund has provided help to 66 nursing or technology students, and the repayment record is so good as to permit the making of several new loans each year. Moreover, a few local Auxiliaries have individual projects of this kind. The Dubuque County Auxiliary, for example, supports two full-expense nursing-school scholarships at hospitals in Dubuque from the proceeds of its annual Mardi Gras ball.

The AMA Education and Research Foundation and the Iowa Medical Foundation—establishments with various functions such as helping to defray the general expenses of medical schools, providing loans to medical students and conducting medical research—are the recipients of frequent gifts from the state and county Auxiliaries. The groups assess themselves certain amounts per member each year, and conduct money-raising entertainments to augment their gifts.

The organizations of doctors' wives also promote health work more directly. Several county Auxiliaries and the statewide group present awards each year to women, other than ones of their own members, who have done outstanding work as volunteers in the health field. The Auxiliary to the Polk County Medical Society was instrumental, two or three years ago, in starting the Home Care-Homemaker service in Des Moines. Most of the local Auxiliaries have provided schools and church groups with copies of a set of instructional materials called "Milestones to Marriage" as a means of helping prevent emotional difficulties, and some have arranged for showings of a film on the suicide problem to the members of police departments. They have distributed information on water safety, and sets of instructions for baby-sitters. Within the next few weeks, several of them intend to put up posters and otherwise campaign to get people to have themselves immunized against tetanus, polio, smallpox and other preventable diseases. And in a growing number of Iowa cities the local Auxiliaries arrange for, and act as salesladies at, sales of articles made by handicapped people. This work is conducted in cooperation with the Iowa Society for Crippled Children and Adults and the Iowa Commission for the Blind, and the entire proceeds are returned to the people who made the articles.

Recently, some of the local Auxiliaries have begun collecting sample medicines, recent issues of medical journals, and up-to-date medical texts for shipment to physicians in underdeveloped countries. For another part of the same project, the Auxiliary members contribute worn-out men's shirts and alter them into hospital gowns for use abroad.

These are highly worthwhile types of work, and since all of them provide occasions for making and strengthening friendships and having a good time, every doctor's wife in Iowa should join in them.

THE JOURNAL *Book Shelf*

BOOK REVIEWS

CURRENT PRACTICE IN ORTHOPAEDIC SURGERY, VOLUME II, ed. by *John P. Adams,* M.D. (St. Louis, C. V. Mosby Company, 1964. $13.50).

The purpose of these volumes is to present accumulated knowledge on certain subjects in orthopaedic surgery by prominent authors. This it does in detail. Minutiae are included rather than edited out as in many current publications. When reading some of the chapters, one feels he is sitting at the right hand of the modern master.

The chapter on tendon transfers for nerve paralysis of the hand and wrist by Daniel G. Riordan, M.D. is alone worth the price of the volume. The one on fractures and dislocations of the lower thoracic and lumbar spine, with and without neurological involvement, by F. W. Holdsworth, M.Chir., F.R.C.S. is a classic. A whole chapter is devoted to treatment of injuries of proximal interphalangeal joints of the fingers by Raymond M. Curtis, M.D. The large subject of fractures and dislocations of the elbow in children is handled in explicit detail by William P. Mitchell, M.D. and John P. Adams, M.D. I cannot agree, however, that Dunlap's traction is a panacea for the management of supracondylar and transcondylar humeral fractures. In "Fractures of the humeral shaft" Marcus J. Stewart, M.D. presents one of his favorite subjects in his usual thorough and conservative manner.

Chapter nine, "Comparative biology of mineral deposition," by Henry D. Isenberg, Ph.D. and LeRoy S. Lavine, M.D., was, is and will be beyond my comprehension.—*Douglas N. Gibson, M.D.*

PSYCHOSOMATIC NEUROLOGY, by *Harry A. Tietelbaum,* M.D., Ph.D. (New York, Grune and Stratton, 1964. $13.75).

It has become commonplace for physicians to acknowledge the existence of psychological factors in what they regard as physical disease. It is also generally accepted that physical disease can affect the psychic state of the patient. For most practitioners this is the essential nature of so-called psychosomatic medicine. Whatever advance this may seem to be in the direction of more sophisticated medical theory, it fails to deal with the central "philosophic" issue which must be resolved if we are to have a real understanding of the dynamics of disease processes.

The psychophysical problem has long occupied the attention of philosophers, theologians and scientists. In its classical context, the problem was beyond solution. The scientific revolution, bringing with it the Relativity Theory, the Quantum Theory and the new mathematics, was and is a philosophic revolution. As a result, scientific discourse is in large measure also philosophic discourse. Modern logic and scientific method have provided new tools for fresh attacks on previously unsolved problems of classical philosophy. The application of such in the field of medicine has necessarily been limited, but with the development of a rapprochement between psychology and physiology and the emergence of psychosomatic concepts, the body-mind problem commands our attention and challenges our newly acquired knowledge. Although much has already been achieved, in a pragmatic sense, we have thus far made little advance in the development of fundamental theory. Without such an advance, we are not apt to obtain concepts having a high order of explanatory function or predictive potential.

To his great credit, Dr. Tietelbaum addresses himself to the basic questions. Utilizing contributions of modern logic and physics, as well as of psychology, he establishes a universe of discourse for the discussion of psychophysical processes. Part I of this present book directs our attention to the very nature of neurologic integrative processes in personality dynamics, homeostasis, learning and hypnosis. From this he develops a concept of the psychosomatic *process.* The last word provides the key to our understanding of the phenomenology of disease.

Part II applies the concepts to disturbances of processes as they are mediated by specific neurologic subsystems. These range from disturbances of consciousness to disturbances of functions associated with individual cranial nerves, from agnosia, apraxia and aphasia, to general afferent and efferent neurologic processes.

If there be weaknesses in Dr. Tietelbaum's philosophic or clinical exposition, they are matters for technical debate and, for this reviewer, they must yield to general praise for the excellent manner in which he has dealt with a difficult subject. If we are to have a meaningful system of psychosomatic medicine it will be because works such as this are given the studied attention they deserve. Dr. Tietelbaum teaches by making us think, and by enlarging our frames of reference for the understanding of clinical phenomena.—*Sidney L. Sands,* M.D.

PEDIATRIC NEUROLOGY, ed. by *Thomas W. Farmer,* M.D. (New York, Harper & Row, 1964. $18.50).

There are 13 contributors to this volume, but there is nothing unlucky about either the number or the

choice of authors for this well-written, easily-read, comprehensive and authoritative text. In his preface the editor says, "Neurologic and sensory disorders afflict six per cent of children." This means that most of us can profit from up-to-date information in this statistically important area of medical practice. The authors include pediatricians, neurologists and neurosurgeons, to insure a well-rounded presentation of material.

The chapter headings include the usual categories. In addition, there is a chapter on "Disturbances of Water and Electrolytes," and one on "Mental Subnormality." Several useful tables of differential diagnoses complement the text admirably.

The volume is timely and strongly recommended.—*John T. Bakody,* M.D.

PRINCIPLES AND PROCEDURES IN CORRECTION, RECONSTRUCTION AND TRANSPLANTATION (Five Volumes), ed. by *John Marquis Converse, M.D.* with a section on the hand by J. William Littler, M.D. (Philadelphia, W. B. Saunders Company, 1964. $125.00).

This set is the most ambitious and comprehensive work ever published in the field of plastic and reconstructive surgery. Eminently qualified as the coordinator for this work and the contributor of a number of its chapters, is John Marquis Converse, whose original training with Kazanjian and Gillies bore most productive fruit in service to our armed forces during World War II. His collaborator and the editor of Volume IV on Surgery of the Hand and Upper Extremity is J. William Littler, likewise qualified by his extensive experience with Sterling Bunnell in the centers for hand surgery of the U. S. Army. Dr. Littler not only has contributed a number of chapters to this volume, but has personally illustrated these with drawings and sketches of high quality.

It is difficult to do justice to a work of five volumes, totaling 2,253 pages, each volume of considerable though not ponderous size. It is noteworthy that the contributors to this work, 76 in all, are plastic surgeons, and specialists in related fields who, almost without exception are in their forties or fifties and at the height of their productive powers. The prodigious effort which they have put forth to produce this new work is evidenced by the completeness of the subject matter and the excellence of the many illustrative drawings and photographs.

Volume I deals with General Principles of Reconstructive Plastic Surgery, Volumes II and III with the Head and Neck, Volume IV with Surgery of the Hand and the Lower Extremity, Volume V with the Trunk, Genito-Urinary System and Ano-Rectal Malformations, Tissue Transplantation and Burn Shock.

Medical libraries should consider this five-volume set indispensible as a reference work in this field, and many surgeons will find it well worth while to own the set or individual volumes, which are available separately.—*J. M. Bruner,* M.D.

Members of the Iowa Society of Clinical Medicine will attend a special program on Saturday, April 10, 1965, at the Manor House —Johnny and Kay's Restaurant, Des Moines, Iowa.

Several short talks will be presented by Des Moines physicians. The guest speaker is John Glomset, M.D., of Seattle, Washington, who will discuss "Chemical Aspects of Atherosclerosis." Doctor Glomset is Associate Professor of Medicine, University of Washington Medical School.

The program will begin at 9 a.m. and will conclude at 1 p.m., at which time luncheon will be served.

BOOKS RECEIVED

HEART ATTACK: NEW HOPE, NEW KNOWLEDGE, NEW LIFE, by *Myron Prinzmetal,* M.D. (New York, Simon and Schuster Publishers, 1965, $4.50 cloth, $1.75 paper).

PHYSIOLOGY OF THE EYE, FOURTH EDITION, by *Francis H. Adler,* M.A., M.D., F.A.C.S. (St. Louis, C. V. Mosby Co., 1965, $18.75).

FUNDAMENTALS OF ORTHOPAEDICS, by *John J. Gartland,* A.B., M.D. (Philadelphia, W. B. Saunders Co., 1965, $8.00).

SIMPLE SPLINTING, The Use of Light Splints and Related Conservative Therapy in Joint Diseases, by *Jerome Rotstein,* M.D. (Philadelphia, W. B. Saunders Co., 1965, $6.50).

LEOPOLD'S PRINCIPLES AND METHODS OF PHYSICAL DIAGNOSIS, THIRD EDITION, by *Henry U. Hopkins,* M.D. (Philadelphia, W. B. Saunders Company, 1965, $8.50).

Smoking Affects Sense of Smell

A study of the sense of smell among 500 persons has indicated that there is a relationship between olfactory acuity and cigarette smoking. The study was reported by R. E. Joyner, M.D., Texas City, Texas, in the November, 1964 issue of ARCHIVES OF OTOLARYNGOLOGY.

Tests revealed a statistically significant decrease in smelling acuity ranging from that of non-cigarette smokers to those who smoke 21 or more cigarettes a day. The subjects, all employed at an industrial plant, were told to sniff twice only from each of 14 bottles containing graduated strengths of phenol in liquid petrolatum, and then state whether or not they smelled a definite, distinct odor. The bottles were held an inch below the nose and were sniffed in random fashion. Previous studies had shown that there is a probable correlation between aging and deterioration of the sense of smell, but an analysis of his results, Dr. Joyner said, showed that the number of cigarettes smoked exerted an effect almost four times as strong as the one attributed to the age factor.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., ACTING COMMISSIONER

Program of the Division of Dental Hygiene

The objectives of the Division of Dental Hygiene are to assist Iowa citizens in preventing diseases of the oral cavity, and through educational programs, to persuade them to secure correction of dental defects.

To accomplish these objectives, the staff devotes its main efforts to the adjustment of fluoride concentrations in public water supplies and to the promotion of the Iowa plan of dental health education. Efforts are made to measure the benefits derived from both of these programs.

As of January 1, 1965, there were 60 fluoride installations in Iowa, serving 68 communities with a total population of 949,099 (1960 census). The first installations in Iowa were made in 1951 at Waukon (population 3,639) and at Dubuque (population 56,606). In order to measure the benefits of the fluoride, children in the kindergarten and first, second and seventh grades who had lived in the community all their lives and had used city water all of that time were examined shortly after the start of the program, and again five and 10 years later. The program was started in other communities until it became evident that the benefits were so universal that further examinations were a waste of effort.

Examples of the benefits of fluoride adjustment after 10 years are shown in Tables 1 and 2.

Of 2,326 Dubuque children examined in 1951, 223 (9.6 per cent) were caries-free. Of 2,258 Dubuque children examined in 1961, 628 (27.0 per cent) were caries-free.

All of Iowa's 730 public water supplies contain some fluoride. Thirty-six have 0.7 to 1.0 parts per million, and 113 of them have 1.0 p.p.m. or more of fluoride. These are all natural fluoride concentrations. Adjustment is not recommended where the natural fluoride content of water is 0.7 p.p.m. or more, for the benefit that can thus be achieved doesn't justify the expenditure of funds.

The support which members of the medical profession have given to the fluoridation program is greatly appreciated by the Division of Dental Hygiene. There is one warning that must be issued, however. A referendum is frequently suggested as a means of determining the wishes of the public. The attorney general has ruled that the expenditure of tax money for referenda is illegal unless specifically authorized by the Code of Iowa, and since fluoridation is not mentioned in the Code, such elections cannot be conducted at public expense. Some referenda in Iowa have been financed by private funds.

The Iowa plan of dental health education is our second approach to the prevention and correction of dental diseases. This program is co-sponsored by the University of Iowa and the State Department of Health, and its offices are at the Dental College in Iowa City. The program of dental health education is outlined in a booklet entitled HANDBOOK OF DENTAL HEALTH FOR THE ELEMENTARY TEACHER.

Each child is given a referral card to take to his dentist. When the dentist has completed all necessary dental care, he signs the card, and the child returns it to his school. At the end of the school year, the numbers of returned cards are reported

TABLE 1

Waukon	Per Cent of Reduction in Decayed, Missing or Filled Permanent Teeth	Per Cent of Reduction in Decayed, Missing or Filled Primary Teeth
5-year-olds	100%	48%
6-year-olds	87%	34%
7-year-olds	73%	51%
8-year-olds	78%	36%
12-year-olds	61%	23%
13-year-olds	23%	—

TABLE 2

Dubuque	Per Cent of Reduction in Decayed, Missing or Filled Permanent Teeth	Per Cent of Reduction in Decayed, Missing or Filled Primary Teeth
5-year-olds	62.6%	49.7%
6-year-olds	76.5%	45.9%
7-year-olds	72.7%	47.8%
8-year-olds	78.9%	39.3%
12-year-olds	44.9%	—
13-year-olds	43.7%	—

to the Iowa City office. Reports which have been tabulated for the school year 1963-1964 show that there were 366,776 children who participated in the program last year, and that 200,270 (55 per cent) returned cards signed by a dentist indicating all necessary dental care completed.

A total of 384 public school systems and 173 parochial schools used the program during the 1963-1964 school year.

The staff of the Division of Dental Hygiene consists of one dentist, one nurse consultant and two secretaries.

TUBERCULOSIS—NEW CASES

IOWA—1964*

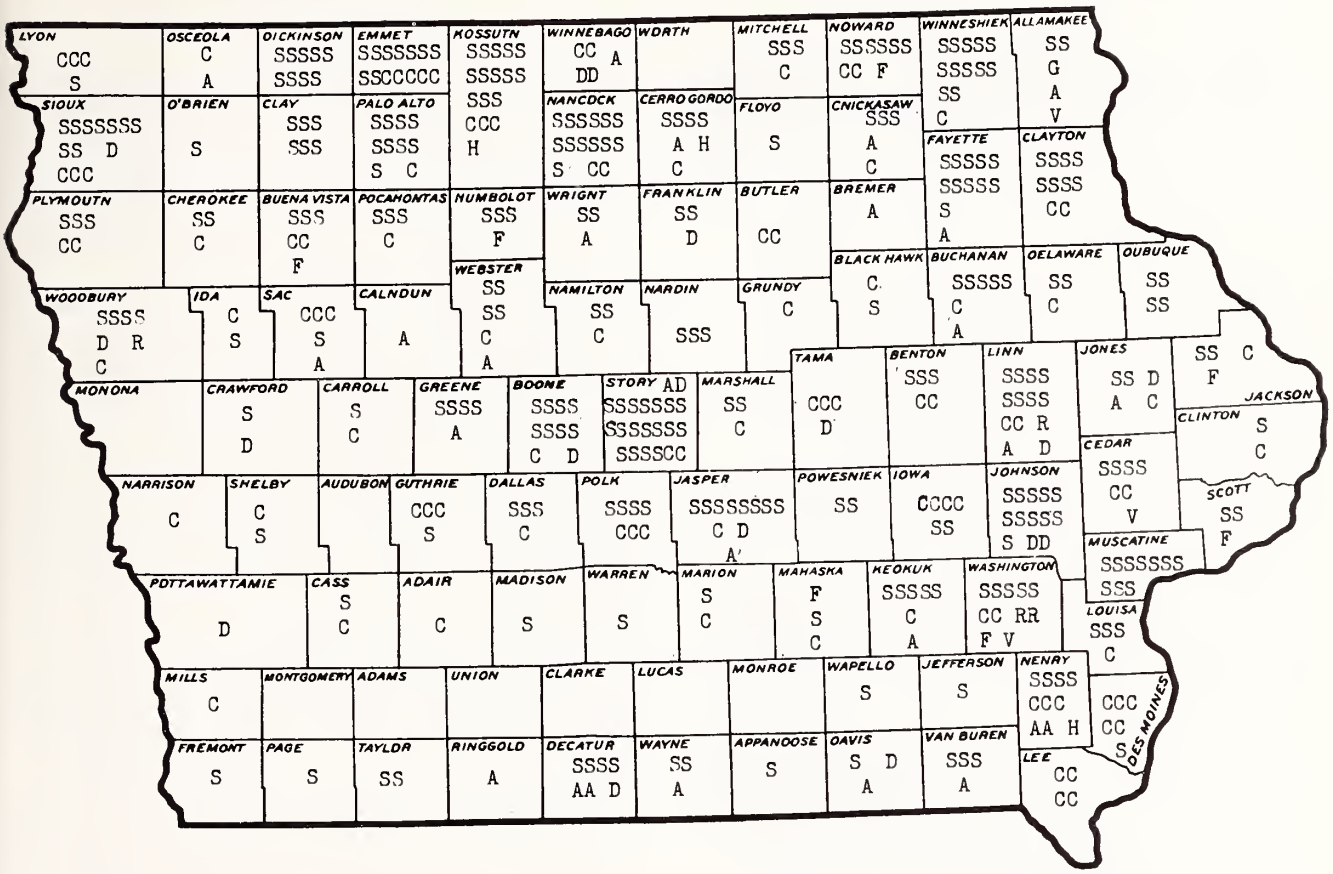
Counties	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Adair					1								1
Allamakee									1	2			3
Appanoose										1		1	2
Black Hawk	3	2			2	1			1	2	2	1	14
Boone	3								1				4
Bremer			1		2								3
Buchanan		1			3							2	6
Butler	1												1
Carroll								1			1		2
Cass					1								1
Cedar								1					1
Cerro Gordo				1						1		2	4
Cherokee		1											1
Chickasaw								1					1
Clay										1			1
Clayton	2							1					3
Clinton	1									1		1	3
Crawford								1				1	2
Dallas										2			2
Davis	1											1	2
Des Moines		1	1		1		1						4
Dickinson										1		1	2
Dubuque		4							1	1	1		7
Emmet							3						3
Floyd			1		1								2
Fremont		1											1
Greene	1								1				2
Guthrie				1			1	1					3
Hamilton												1	1
Hancock	1												1
Hardin						1		1					2
Harrison			1						2				3
Henry										2			2
Howard	1												1
Humboldt		1			1								2
Ida			1									1	2
Iowa											1		1
Jackson												1	1
Jasper					1					1		1	3
Jefferson		1			1			1					3
Johnson		1			1			1				1	4
Jones												1	1
Keokuk	2											1	3
Lee					1		1					1	3
Linn	2	2	3	1	1		1	5	2	4	1	5	27
Louisa	1			1							2		4
Mahaska		2			1								3
Marion												1	1
Marshall	1					1	1		1				4
Mills					1								1
Mitchell	1	1			2								4
Monroe	1											1	2
Montgomery				1									1
Muscatine	1					2				1			4
O'Brien					1								1
Page						1	1						2
Palo Alto				1									1
Polk	7	2		4	6	3	7	4		2	7	6	48
Pottawattamie		2	1	2	3					2		1	11
Ringgold						1					1		2
Sac	1												1
Scott			1	2			3	3	2		1	5	17
Shelby				1					1				2
Sioux								2				1	3
Story					2			1		2	3		8
Tama		1							2	1	1		5
Union				1		1					1		3
Van Buren					1								1
Wapello		3		1			1					1	6
Warren	1	1											2
Washington	1							1				2	4
Webster			1					2		3		1	7
Winnebago										1			1
Winneshiek					1			1					2
Woodbury		3	1		1			1	3	1		3	13
Worth	1		1										2
1964 Total	34	30	13	17	36	11	20	31	16	32	24	43	307
1963 Total	35	20	36	21	26	48	27	54	25	21	25	37	375

* To keep Iowa's morbidity reporting in conformity with that of the Morbidity and Mortality reports of the USPHS, we have closed the year of 1964 with the week ending January 2, 1965.

1964 Total Reactivated Cases—44

1963 Total Reactivated Cases—15

RABIES IN ANIMALS—IOWA, 1964*



* All cases confirmed by laboratory examination, except one cow in Butler County and two cows in Story County.

Legend	Cases
S—skunk	305
C—cattle	97
A—cat	26
D—dog	17
F—fox	7
G—gopher	1
H—horse	3
R—raccoon	4
V—civet cat	3
Total	463

National Society for the Prevention of Blindness, Inc.

Dr. Charles E. Berry, medical specialist for America's astronauts, will be the featured speaker at the 1965 Sight-Saving Conference of the National Society for the Prevention of Blindness, Inc. The three-day national meeting, which has the theme "Vision for the Space Age," will be held March 24-26 at the Rice Hotel, Houston.

Dr. Berry, chief of the Medical Center Programs for the National Aeronautics and Space Administration's Manned Spacecraft Center in Houston, will address a dinner-meeting of the conference on Wednesday, March 24. His speech will cover "Visual Aspects of Space Flight."

Another principal speaker at the gathering will be Martin Cherkasky, M.D., medical director of Montefiore Hospital in New York City, who will speak on "The Health Professions' Concern for the Aging" at the closing luncheon on March 26.

Topics for conference sessions will be Eyesight and Man's Longer Lifespan, Community Planning for Prevention of Blindness, Preschool Vision Screening, Telling the Facts of Prevention to the Community, and a slide presentation, "Rx for Eye Safety." Speakers at a session on Scientific Developments in Prevention will consider New Concepts in Protective Eyewear; Cryosurgery in Ophthalmology; Current Status of Diabetic Retinopathy; and Diagnosis, Classification and Management of Amblyopia.

A special conference event will be a tour of the NASA Manned Spacecraft Center on March 25. All conference sessions will be held in the Rice Hotel's Celebrity Room. No registration fee is charged, and all are welcome to attend.

Morbidity Report for Month of January 1965

Diseases	1965 Jan.	1964 Dec.	1964 Jan.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	358	434	351	Hancock, Jefferson, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	621	78	89	Dubuque, Marion, Polk
Whooping cough	13	4	3	Black Hawk
Brucellosis	11	15	7	Scott
Chickenpox	1338	837	264	Des Moines, Dubuque, Polk, Scott
Meningococcic meningitis	0	1	0	
Mumps	487	300	1126	Black Hawk, Clay, Des Moines, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	116	113	29	Cerro Gordo, Des Moines, Dubuque, Louisa
Rabies in animals	24	18	28	Dickinson, Jackson, Linn
Malaria	0	0	0	
Psittacosis	0	1	0	
Q fever	0	1	0	
Tuberculosis	24	58	35	For the state
Syphilis	71	70	66	For the state
Gonorrhea	154	192	91	For the state
Histoplasmosis	2	183	1	Linn, Page
Food intoxication	0	0	0	
Meningitis (type unspecified)	3	1	0	Greene, Kossuth, Winneshiek
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	0	0	Carroll
Salmonellosis	5	1	8	Cerro Gordo, Lee, Story, Webster
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	0	0	Johnson
H. influenzal meningitis	1	1	1	Jefferson
Amebiasis	1	2	1	Polk
Shigellosis	3	1	1	Winneshiek
Influenza	3	13	177	Appanoose, Johnson

VA Hospital Summaries for Referring Physicians

In compliance with a request made by Dr. Kenneth K. Hazlet, of Dubuque, Dr. Donovan F. Ward, president of the AMA, U. S. Senator Jack Miller (R., Iowa) and others, Dr. Joseph H. McNinch, chief medical director for the Veterans Administration, issued the following directive on January 11, 1965:

"1. It is highly desirable that a patient's private physician receive a report of his hospital treatment. This is especially important when the private physician has referred the case to the VA. In most non-VA hospitals, reports are routinely furnished to the referring physician without securing the consent of the patient. We are unable to do this because of statutory requirements. However, it is our policy to encourage each patient to execute VA Form 3288 to authorize us to furnish this information.

"2. As part of the admission procedure, VA Form 10-P-10 and allied papers (VA Form 10-2829, Telephonic Authorization, correspondence, etc.) will be carefully examined to ascertain if the patient was referred to the hospital by a private physician. If so, VA Form 3288 will be prepared for the veteran's signature to authorize release of a summary to the physician. The veteran will be advised of the purpose and asked to sign the form. In all other cases, the patient will be advised of the advantages of furnishing a report of his hospitalization to his private physician, and if he desires, will be assisted in completing VA Form 3288.

"3. Each veteran who does not sign VA Form 3288 for this purpose at the time of admission, will be given another opportunity to do so prior to discharge.

"4. No further attempt will be made to secure authorization from veterans who state they have no private physician, unless an appropriate VA physician considers it advisable in a particular case. In such instances the veteran will be assisted in selecting a suitable physician. VA employees will carefully avoid recommending any specific physician.

"5. VA FL 10-286, appropriately overprinted, will be used to transmit a copy of VA Form 10-1000 to the private physician and will advise him to contact the hospital if he desires more detailed information not contained in the summary. In psychiatric and tuberculosis cases a copy of the admission summary may be routinely included.

"6. The Chief, Registrar Division, will be responsible for establishing necessary procedures and controls to effectively carry out this policy."

Woman's Auxiliary News

WOMAN'S AUXILIARY to the IOWA MEDICAL SOCIETY

1965 ANNUAL MEETING, DES MOINES

MRS. H. G. ELLIS, *Presiding*

Sunday, April 11, 1965 (Hotel Kirkwood)

2:00-4:00 Pre-Convention Board of Directors Meeting —Iowa Room

7:00 Social Hour and Dutch Treat Supper for *ALL* board members, convention committee chairmen, and husbands or guests at the home of Dr. and Mrs. Noble Irving, Des Moines.

Monday, April 12, 1965 (Hotel Kirkwood)

8:00-3:00 Registration—Main Lobby

9:00 Opening of 36th Annual Meeting—Capitol and Marquette Rooms

Business Session

10:15 WE SPEAK WITH PRIDE—HIGHLIGHTS FROM OUR COUNTY PRESIDENTS

EASTERN AREA—Mrs. S. M. Korson, 1st Vice President, presiding

Black Hawk, Buchanan, Clinton, Dubuque, Grundy, Jefferson, Johnson, Lee, Marshall, Scott

CENTRAL AREA—Mrs. R. E. Hines, 2nd Vice President, presiding

Appanoose, Boone, Cerro Gordo, Dallas-Guthrie, Greene, Hamilton, Mahaska, Marion, Polk-Warren, Wapello, Webster, Worth, Wright

WESTERN AREA—Mrs. Henry Boe, President-Elect, presiding

Cass, Clay, Dickinson, Emmet, Lyon, Monona, Montgomery, Osceola, Palo Alto, Pottawattamie, Shelby, Sioux, Woodbury

11:30 Medical Ethics for Physicians' Wives—Robert B. Throckmorton, General Counsel, American Medical Association

12:00 Voting for Nominating Committee and National Delegates

12:15 Luncheon—Arbor and Orchard Rooms, Honoring County Presidents—

(*All* physicians' wives are cordially invited to attend the luncheon and meeting)

AMA-ERF Awards

1:15 "What's Happening in Washington"—Frank Woolley, Field Representative, American Medical Association

1:45 Program Clinic

HAVE YOU TRIED THIS? IDEAS, SKITS, COSTUMES, GIMMICKS—Programs for your Auxiliary and for use in Community Organizations

Mrs. Howard Ellis, President, presiding

IT'S FUN TO MAKE MONEY—Mrs. Ralph Wicks

ON THE STREET WHERE YOU LIVE—Mrs. Noble Irving and Mrs. H. C. Merillat

THIS IS YOUR FUTURE—Mrs. George Paschal

THE HAND THAT HELPS—Mrs. E. A. Larsen

THE BEAUTIFUL AMERICAN—Mrs. F. P. Ralston

RALLY AROUND THE CAUSE GIRLS—Mrs. R. F. Nielsen

GETTING TO KNOW YOU—Mrs. S. M. Korson

WHO HAS PROBLEMS?—Mrs. B. R. Goldman

BLOW YOUR HORN—Mrs. J. F. Throckmorton and Mrs. J. G. Thomsen

DOWN ON THE FARM—Mrs. S. P. Leinbach

PLAIN TALK FOR LIVING—Mrs. H. A. Weis

2:30 Spring Fur Fashions: Courtesy of Cownie Furs

Tuesday, April 13 (Hotel Kirkwood)

8:00-12:00 Registration—Main Lobby

8:00 Area Planning Session—West Room

All Auxiliary members from western area to attend.

9:00 Second business session of the 36th Annual Meeting.

10:00 Memorial Service

10:15 Election and Installation of Officers

11:00 Address—Mrs. W. H. Evans, National Auxiliary President

Message from Iowa Medical Society—F. G. Ober, M.D., President-Elect and Chairman of Woman's Auxiliary Advisory Committee

12:00 Guest Day Luncheon—Marquette, Kirkwood and West Rooms

Presentation of Essay Contest Awards

Presentation of Volunteer Health Service Award

1:30 "The Physician, the Clergyman, and the Terminal Patient"—Panel introduced by O. N. Glesne, M.D., Chairman, Iowa Medical Society "Medicine and Religion" Committee

Panel Moderator—Rev. Dr. Paul McCleave, Director of AMA Department of Medicine and Religion

Panel: Dr. Louis E. Valbracht, St. John's Lutheran Church, Des Moines

Rabbi Irving Weingart, Tifereth Israel Synagogue, Des Moines

Father Carl Meier, St. Ambrose Cathedral, Des Moines

Richard D. Liechty, M.D., University of Iowa, College of Medicine, Iowa City

Paul Cash, M.D., Des Moines

2:30 Post-Convention Board Meeting—Colonial Room

7:00 Iowa Medical Society Reception and Banquet, Fort Des Moines Hotel

9:00 Woman's Auxiliary Benefit Dance for Health Education Loan Fund—Grand Ball Room—Hotel Fort Des Moines

ATTEND THE PRESIDENT'S COFFEE

Coffee & Rolls 8:00-8:45 a.m.

Kirkwood Room

Monday and Tuesday Mornings

Mrs. William H. Evans

We are pleased to inform you that Mrs. William H. Evans, of Youngstown, Ohio, president of the Woman's Auxiliary to the American Medical Association, will be the Auxiliary's guest at the 36th Annual Meeting, April 12 and 13.

Mrs. Evans, an Auxiliary member for 20 years, has served her county and state Auxiliaries in many capacities. She was president of the Ohio State Auxiliary in 1956-57. On the national level she served on the resolutions committee in 1957, as regional vice-president, 1957-58, as director for two years, 1958-60, and as constitutional secretary for two years, 1961-63.

Dena Fredrick Evans is a native of Youngstown, Ohio, and before her marriage in 1942 to Dr. Evans, an ophthalmologist and otolaryngologist, she was employed as an office manager, buyer and jewelry designer. She also studied at Case School of Applied Science, University of California, and the American Gemological Institute. She has retained her interest in gemology, and in 1955 designed the first pin for past-presidents for the Ohio Auxiliary and later another pin to be used by the past-presidents of all county Auxiliaries in her state.

During World War II, while her husband was on duty in the Pacific, Mrs. Evans was also making her contribution to the war effort. She volunteered her services to the American Red Cross in San Francisco and to the War Information Center of the San Francisco War Council. She served, in an official capacity, as a volunteer for the American Women's Volunteer Service and also served as vice-chairman of the admission department in charge of volunteer personnel of the Stage Door Canteen, which was sponsored by the American Theater Wing. During the last year of the war, she served as a volunteer in the Norfolk, Virginia, Chapter of the American Red Cross.

She is the recipient of recognition from Governor James A. Thodes, of Ohio, and Mr. Anthony B. Flask, mayor of Youngstown, and has been given a WKBN Broadcasting Corporation Certificate of Merit in appreciation of her interest and efforts in behalf of her community, and a Special Recognition Award by the Youngstown Area Chamber of Commerce for important community contributions. Recently, the Sixth District of the Ohio State Medical Association gave her an appropriate engraved plaque and a life membership in the Auxiliary of her county medical society. Mrs. Evans' activities have been the subject of editorials and special articles in the YOUNGSTOWN DAILY PRESS, the OHIO STATE MEDICAL JOURNAL, and the BULLETIN OF THE MAHONING COUNTY MEDICAL SOCIETY. She has been an honored guest of both the Youngstown Rotary Club and the Federated Women's Club of Youngstown.

Mrs. William H. Evans

We indeed feel privileged to have Mrs. Evans as our guest, and sincerely hope all our members will be present to honor her.

We Proudly Present

Two of the special events scheduled for the 36th Annual Meeting are: "The Physician, the Clergyman, and the Terminal Patient," a panel discussion, and "What's Happening in Washington," presenting current information from the 89th Congress.

The responsibilities of medicine and religion to the patient and his family during terminal illness will be discussed by a panel of physicians and clergymen. Representing the Des Moines clergy will be: Dr. Paul Valbracht of St. John's Lutheran Church, Rabbi Irving Weingart of Tifereth Israel Synagogue, and Father Carl Meier of St. Ambrose Cathedral. Speaking for medicine will be Dr. Richard Liechty of Iowa City and Dr. Paul Cash of Des Moines. Rev. Dr. Paul McCleave, director of the Department of Medicine and Religion of the AMA, will act as program moderator, and Dr. Otto Gleasne, chairman of the IMS Committee on Medicine and Religion will introduce the program.

Panel members will discuss their position in relationship to the patient and his family, what a

particular patient's faith might require at this time, and the patient's right to set his spiritual and temporal affairs in order before death.

Mr. Frank Woolley, field representative of the AMA and an experienced observer of the Washington scene, will "highlight" Monday's program. Mr. Woolley's ability to correlate current legislative proposals with national political trends will provide his listeners a readily understandable picture of "What's Happening in Washington." A similar address to the Auxiliary Board won unanimous endorsement for the proposal that Mr. Woolley be presented as a primary speaker at the Annual Meeting.

Mr. Robert B. Throckmorton, general counsel of the AMA, will speak on "Medical Ethics for Physicians' Wives," on Monday morning. He will point out how your remarks may well create havoc in both the professional and the lay community, and will discuss the moral and legal implications of those remarks.

The Importance of Knowing

In continuing its "Informational Program for Auxiliary Members," the Iowa Medical Society made available three outstanding speakers at the January Auxiliary Board of Directors Meeting.

Mr. Frank Woolley, field representative for the American Medical Association, presented the major issues confronting American Medicine in our national legislature. He stated that women in our Auxiliary are the "key" to provide the counter force to equalize the bureaucratic forces pushing for central government control of medicine.

Due to the enthusiastic response to Mr. Woolley's talk, the Board voted unanimously to ask him to be a guest speaker at our 36th Annual Meeting, on Monday, April 12. This will be one of the HIGHLIGHTS of the meeting you will *NOT* WANT TO MISS.

Elmer Smith, M.D., head of the Division of Medical Service, State Board of Social Welfare, explained that the purpose of the Kerr-Mills Act is to provide help to the aged in meeting medical expenses beyond their ability to pay. Administered on the local level, it provides care on the basis of individual need, and allows tax dollars to be spent to their best advantage.

Mr. Donald L. Taylor, executive director of Iowa Medical Society, reported on progress for the new Iowa Medical Society building, commented on Kerr-Mills (MAA), and described what appear to be improved relations between the Iowa Medical Society and Blue Shield. He also discussed the state fee survey which is being conducted.

"News From Around the Hawkeye State"

Blackhawk County

The Blackhawk County Medical Auxiliary held its regular January meeting in the home of Mrs. Gilbert Clark. Hostesses for the buffet dinner were Mesdames Maurice Wicklund, Thomas Board, Cecil Seibert and Dwight Conklin.

An interesting program was presented by Mr. Arnold Webster, a local nurseryman, who spoke on "Flowers of Lasting Value."

Plans were discussed for the annual "Medicine Ball" which was scheduled for Wednesday, February 25. A Mardi Gras theme was chosen. Chairman for the ball was Mrs. Robert Buckles. The proceeds from this event are given to the county's four hospitals.

—MRS. LOUIS WINNINGER, *Publicity Chairman*

Boone County

The regular meeting of the Boone Medical Auxiliary was held Thursday, January 28, 1965. The meeting was called to order by the president, Mrs. W. H. Longworth. The main order of business was the election of new officers. Mrs. A. W. Puntenney was named president for the year 1965.

From 2:00 to 3:00 p.m., the Auxiliary served as hostesses for the Future Nurses Club. Following the girls' tour of the hospital, cookies, coffee and soft drinks were served. In addition to the Auxiliary, representatives of the various hospital departments and the hospital administrator were present to answer questions posed by the girls.

The next meeting of the Auxiliary will be held in March, at which time a delegate will be elected to attend the State Meeting.

—MRS. W. E. ROUSE, *Secretary*

Buchanan County

The Buchanan County Auxiliary is just now bringing to a close a drive for its part in the International Health Activities program for this year. Our husbands' supplies of sample drugs have been quite limited, and similarly, the local dentists and druggists had fewer of them than usual, but they wished to help also.

We do not anticipate a large shipment, but have worked on the basis that "every little bit helps."

—MRS. C. E. WHITE, *Councilor*

Johnson County

The Johnson County Auxiliary held its "garage sale" on November 7, netting $74.00.

On December 2, the Auxiliary assisted the Medical Society with its "career" meeting. The doctors entertained students interested in medicine, for dinner, and their monthly meeting followed.

The garage sale proceeds gave us a little capital

to work with, so our members were invited to a luncheon meeting in January. On January 19, 29 women gathered at the University Athletic Club for lunch, and to hear talks by Mrs. H. G. Ellis and Mrs. Henry Boe. Mesdames C. E. White, S. M. Korson and Hazel Lammey were also our guests. Mrs. White won the door prize in a drawing—"fair and square."

Johnson County is in the process of organizing a county health program, and on March 16, the Auxiliary will hear Dr. Franklin Top, who is in charge of organizing it. We are hopeful that the Auxiliary will be able to help this organization in some useful way.

—CONSTANCE SKULTETY, *President*

Lee County (North)

Lee County (North) Auxiliary extends to all a sincere, happy and progressive New Year.

Since our fall Auxiliary report, members have been active with work projects, money-making projects, and social activities. The money-making projects have been fruitful. A silent auction was held at our regular January monthly Auxiliary meeting in the home of Mrs. Robert S. Reimers. This project netted $17.35, and is always fun. Then, too, our winter rummage sale was a big success. On this project we collected $70.87.

Besides the money-making projects our Auxiliary has been active recently in the field of International Health activities. We have sent a number of "Johnny Coats" and a supply of drugs to World Medical Relief, Inc., Detroit, Michigan. The nice acknowledgments that we received encouraged us to work further in this field.

For social activities during the holiday season, all staff doctors, and their wives were invited to a dinner party at Sacred Heart Hospital by the Sisters of the Third Order of St. Francis. This is an annual event to which everyone looks forward from year to year. Our Auxiliary's gift to the sisters of Sacred Heart Hospital this year was a large, round silver tray. The Auxiliary's name and date had been engraved in the center.

At present we are making plans for further projects: first, to continue encouraging donations to AMA-ERF; second, to work at solving legislative problems pertaining to doctors and their practice; third, to prepare for Doctor's Day, which we celebrate annually; and fourth, to collect rummage to be sent to American Indians.

—MRS. ROBERT E. MURPHY, *President*

Marion County

We had two regular meetings in October and November, 1964. At our November meeting, we had our county nurse as a guest speaker. She is Mrs. John Fisher, of Knoxville, and she spoke to us about mental health and civil defense, and gave us all something *to think about.*

We also had a silent auction which was very successful! The proceeds of that one, and some others we are planning, will go to our main project, the county home.

In December, the Marion County Doctors took their wives out to a social hour and dinner at our Country Club. Afterwards, Dr. G. A. Stanford, the medical director of the V.A. Hospital in Knoxville, gave a very interesting speech about the unit system in the V.A. mental hospital, which is a comparatively new system that several V.A. mental hospitals have recently adopted.

This concluded the year 1964, and we have high hopes for an active and stimulating 1965 for our Marion County Auxiliary.

—MRS. M. F. SLOTERDYK, *President*

Polk County

The Polk County Medical Auxiliary met for a luncheon, on January 8, at the Des Moines Club. Mrs. Florance Meyer, an account executive for Merrill Lynch, Pierce, Fenner & Smith, Inc., investments, gave a most interesting talk on "You and Your Money."

Our Christmas Card project netted $1,118.00, which will be distributed equally to the American Medical Association's Education and Research Foundation, designated for Iowa, to the Iowa Medical Foundation's student loan fund, and to local community service projects which include Polk County Tuberculosis Association, Polk County Association for Retarded Children, Homemakers' Service, one campership at Camp Sunnyside for Crippled Children, and Broadlawns County Hospital Guild.

—MRS. J. H. MCNAMEE, *Publicity Chairman*

Wright County

The Wright County Auxiliary held its organizational meeting, in November, at a morning coffee in the home of Mrs. Richard Young, at Clarion. Edith Eaton and Kitty McCool served as assistant hostesses. Eleven of our membership of 15 were present.

A period of silence was observed at the beginning of our meeting honoring the memory of our recently deceased member, Mrs. Glenn Hruska, of Belmond. A contribution was sent to the Iowa Medical Foundation as a memorial to her. It was also voted to send our usual contribution to the AMA-ERF fund.

In addition, many of our members ordered some of the AMA-ERF note paper, and some planned to order the Medallion Christmas cards. We also decided to sponsor the essay contest in each school in the County where we have Auxiliary representation.

A report was given on the Future Nurses Club of Eagle Grove, and each town group decided to do what it could to interest its school in starting

one. The Clarion and Belmond doctors' wives brought several carloads of interested high school girls to the Eagle Grove High School Future Nurses Club's January meeting. An excellent program was given, delicious lunch was served, and a great deal of interest was "sparked" in the girls who attended.

Many of us were interested in the educational projects of putting either the AMA health posters or the health-educational racks in our husbands' offices and clinics, as Christmas gifts. We also decided to participate in the "Johnny Coat" project this year, and hope to work on these at a joint dinner meeting with our husbands, in February.

Our Auxiliary may hold one more meeting of the more formal program type in the spring. It is always difficult to manage 100 per cent attendance at these meetings, with so many miles involved, but we do feel that there has definitely been an "upsurge in interest" in Auxiliary affairs this year in Wright County.

—MILDRED LEINBACH, *President*

Tea for "Legislative Ladies"

Although a blizzard covered much of the state, several out-of-town members of the board of the Auxiliary to the Iowa Medical Society joined with Des Moines board members and the Auxiliary to the Polk County Medical Society to entertain members of the Legislative Ladies League from the Sixty-First General Assembly. More than 50 Auxiliary members met with thirty-four legislative guests at the Des Moines Art Center on Thursday afternoon, February 11.

Dr. Herman J. Smith gave a skilled and entertaining explanation of IMS functions in improving the service of medicine to the public.

The governor's wife, Mrs. Harold Hughes, and Mrs. George O'Malley, president of the Legislative Ladies League, were honored guests and were joined in the receiving line by Mrs. Daniel Coughlan and Mrs. Howard Ellis, presidents of the Polk County and Iowa Auxiliaries, and Mrs. Parker Hughes, wife of the Polk County Medical Society's president.

State board members Mrs. J. F. Bishop, Davenport, Mrs. D. A. Mater and Mrs. J. P. Ralston, Knoxville, Mrs. F. H. McClurg, Fairfield, and Mrs. E. A. Larsen, Centerville, brought with them legislators' wives from their districts. Other board members contacted legislative wives in their areas, and many had planned to attend but were prevented by the storm.

The general chairman was Mrs. Loren Peterson, and she was assisted by other members of the Legislative Committee, Mrs. Byron Augspurger, Mrs. Rodney Carlson, Mrs. Richard Hammer, and Mrs. Robert Johnson. The co-chairman was Mrs. Paul Cash, who arranged a lovely tea table, assisted by Mrs. Charles Latchem and Mrs. Eberle Thornton.

News From Our Councilors

District V

Mrs. N. A. Schacht reported the Webster County Auxiliary members invited the Calhoun County physicians' wives to attend their last meeting.

District VII

As Councilor for District VII, I visited Johnson County Auxiliary in Iowa City, with Mrs. Selig Korson, on January 19.

The meeting was preceded by a delightful luncheon, held at the University Athletic Club, at which time Mrs. Howard Ellis gave a very interesting and informative talk to the Auxiliary members and invited guests. The theme of Mrs. Ellis's talk was "The Purpose and Objectives of a Woman's Auxiliary to the Medical Society." She stated that although there is no "magic formula" for success, a good yardstick for measuring a project is to know WHY it is important, WHAT needs to be done, and HOW can the Auxiliary best do it.

—MRS. C. E. WHITE

District VIII

At the November luncheon meeting of the Woman's Auxiliary to the Scott County Medical Society, Mrs. Elliott McDonald, who was recipient of the Iowa Volunteer Health Service Award of 1963-1964, was presented a corsage. The business meeting was followed by cards and informal visiting.

The Woman's Auxiliary to the Lee County Medical Society invited me to attend their December Christmas dinner meeting, but due to a blizzard, it was necessary for me to cancel that engagement.

During January, I attended the dinner meeting at which the Scott County Medical Society entertained the wives of its members. The past president of the Woman's Auxiliary, Dr. Betty McConnell, and the current president, Mrs. Richard Daut, gave reports on activities and accomplishments of the organization.

The program, "Medicine in Peru," consisted of a talk and slides by Dr. Gordon Rock, who served there this past summer. Sister William Mary, of Sisters of Mercy, home on leave from Peru, stole the hearts of everyone present with her comments on needs of the area, and her untiring devotion to the lives of these people. She is a sister of Dr. Campbell.

On January 12, I attended the monthly meeting of the Pleasant Valley Township Farm Bureau. I offered to their group and their Rural Safety chairman any assistance we might give them by way of programs or services.

—MRS. JAMES F. BISHOP

District IX

Mrs. D. A. Mater reported that she has contacted all presidents and is in touch with her members-at-large.

Report of Community Service Committee

Essay Contest: A reminder was sent to all county presidents or Community Service chairmen in organized counties urging them to contact their schools again and to get their essays into the State Office by March 15. Mrs. G. E. Nielsen, the chairman of this project for the Auxiliary, has also written a short history of this project for AUXILIARY NEWS. Dr. R. S. Jaggard, of Oelwein, has been urging participation in this contest also, so we are hoping for several entries.

Volunteer Health Service Award: Mrs. O. A. Elliott, the chairman of this project, sent out reminders to all county presidents and Community Service chairmen to make their selections for this award and to send their nominees' names and data to the State Office by March 15.

Handicapped Craft Sales: The proceeds of sales thus far, for 1964-1965, have been as follows:

Spencer (Clay Co. Fair)	$1,300.56
Des Moines	1,138.97
Dubuque	341.05
Sioux City	881.12
Total	$3,661.70

A sale is scheduled for March 11 and 12, in Waterloo. Mrs. F. H. McClurg, the state chairman, is hoping to set up a sale in Fort Dodge in March, and to have one in Fairfield in April. There are possibilities of further sales in Burlington, Council Bluffs, Cedar Rapids, and Davenport, but no dates have yet been set.

The Iowa Society for Crippled Children and Adults, which obtains the merchandise for these sales, says that some merchandise is now being obtained through the Iowa Commission for the Blind. These are articles made by the blind. Also, some additional funds now available to the Crippled Children's Society will be used to expand its home-bound program, and it hopes, as a result, to have more merchandise for the sales.

I answered a survey conducted on a national level about the participation of the Medical Auxiliary in helping the handicapped. I gave my answer in behalf of the entire State of Iowa, but when I received a copy of the completed survey, all credit was given to Polk County. For this I apologize, and I must have slipped somehow in making the difference clear. We did get rated "outstanding"—but it does mean the entire state to me.

We are anxious to hear what some of the Auxiliaries are doing for the new project suggested by AMA, "Medicine and Religion." Our church women are using this as a program for both the men and women, and presented it on February 4. There's been a lot of enthusiasm shown, so we feel there is something in it for all who participate.

The HOMEMAKER-HOME CARE SERVICE BULLETIN states that another service has been established in Sioux City, with Mrs. Barbara Friend as director. There are only five states now without such a service as this.

—Mrs. N. W. IRVING, JR.,
MRS. H. C. MERILLAT

"Let's Do Our Share for AMA-ERF"

The State University of Iowa College of Medicine received $12,465.24 from AMA-ERF this last year. Three hundred and nineteen (319) loans, amounting to $250,000.00 have been made through AMA-ERF to Iowa medical students, interns and residents in the last 16 months. If one considers that the Iowa Woman's Auxiliary donated only a little over $1,000.00 last year, it is obvious that *we are not doing our share.*

Two new projects have been used successfully by some of the county Auxiliaries to raise funds for AMA-ERF. They are the sale of Medallion Christmas Cards and AMA-ERF playing cards. The sale of note paper has been a popular project in many counties. It is available to the Auxiliary free of charge, and can be ordered from:

Mr. Jack Casurella
535 North Dearborn Street
Chicago, Illinois 60610

Certificates of Achievement will be awarded at the Annual State Meeting on the following basis:

1. County Auxiliary contributing the most per member.
2. County Auxiliary with largest increase over last year's contribution.
3. County Auxiliary making the largest contribution.

Please make sure that your county Auxiliary has the amount of its contribution in to me *BEFORE APRIL 1,* in order to be considered for one of the awards.

—MRS. RALPH WICKS, *Chairman, AMA-ERF*

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 50312

President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

Recording Secretary—Mrs. M. E. Olsen, Minden 51553

Corresponding Secretary—Mrs. C. W. Latchem, 942 56th Street, Des Moines 50312

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Throckmorton, 1201 64th Street, Des Moines 50311

Associate Editor—Mrs. J. G. Thomsen, 207 Glenview Drive, Des Moines 50312

U.C. MEDICAL CENTER LIBRARY
APR 8 1965
San Francisco 94122

JOURNAL of The IOWA MEDICAL SOCIETY

ANNUAL UNIVERSITY ISSUE

- Greetings From the Dean—Page 171
- Notes on the Gold-Headed Cane—Page 172
- Project Hope—Page 175
- Risk of Atherosclerotic Coronary Heart Disease—Page 177
- Observations on the Recognition of Prediabetes and Diabetes Mellitus—Page 181
- Changing Concepts in RH Isoimmunization—Page 187
- U. of I. College of Medicine Clinical Pathologic Conference—Page 189

Iron deficiency is effectively treated with Zentinic®

Zentinic is an oral multifactor hematinic in Pulvule® form. ■ It offers efficient treatment of iron deficiency in patients with menorrhagia, pregnant patients with depleted iron stores, and adolescent patients with erratic eating habits complicated by the onset of menstruation and rapid growth. ■ The Zentinic formula contains 100 mg. of elemental iron as ferrous fumarate and 200 mg. of vitamin C to aid absorption of the iron by helping to maintain it in the ferrous state. ■ In addition, the B complex vitamins are included for general nutritional support.

500232

Zentinic® Lilly

Multifactor Hematinic with Vitamins

APRIL, 1965

epilepsy can undermine self-reliance

"A therapeutic 'bull's-eye' may be scored with DILANTIN [diphenylhydantoin] even for a person with long-standing convulsions previously unrelieved by phenobarbital."* Such efficacy can make a substantial contribution to your epileptic patient's rehabilitation . . . improve his prospects for employment . . . foster greater self-reliance.

Indications: Grand mal epilepsy and certain other convulsive states. **Precautions:** Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. **Side Effects:** Allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Upon discontinuation of therapy eruptions usually subside. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Though mild and rarely an indication for stopping dosage, gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered, especially in children, adolescents, and young adults. During initial treatment, minor side effects may include gastric distress, nausea, weight loss, transient nervousness, sleeplessness, and a feeling of unsteadiness. All usually subside with continued use. Hematologic disorders including megaloblastic anemia, leukopenia, granulocytopenia, pancytopenia, and aplastic anemia have been reported. Nystagmus may develop. DILANTIN is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm.

*Lennox, W. G.: Epilepsy and Related Disorders, Boston, Little, Brown and Company, 1960, vol. 2, p. 865.

432R65

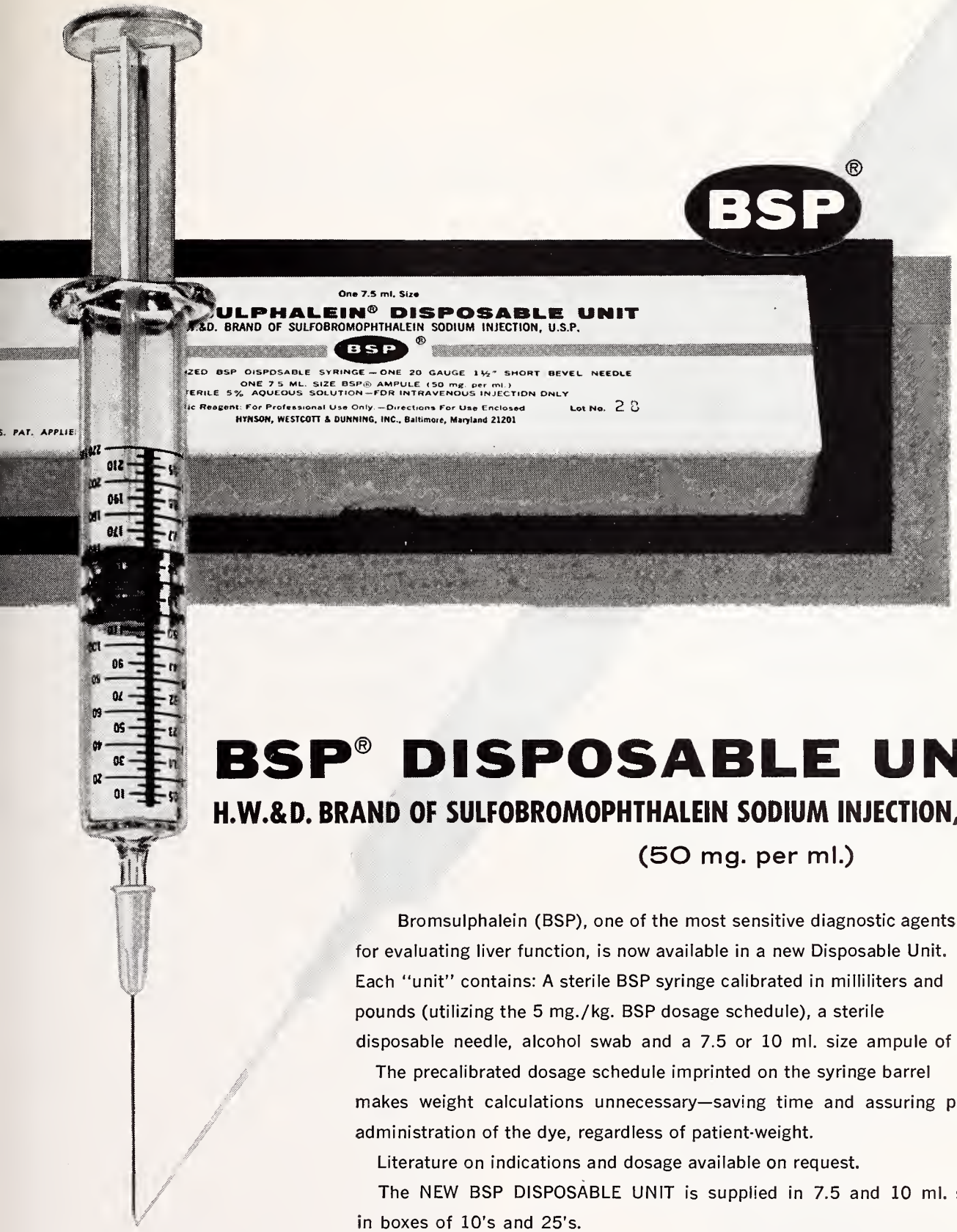
PARKE-DAVIS

PARKE, DAVIS & COMPANY, Detroit, Michigan 48232

Dilantin®
(diphenylhydantoin)

PARKE-DAVIS

helps to restore confidence



BSP® DISPOSABLE UNIT

H.W.&D. BRAND OF SULFOBROMOPHTHALEIN SODIUM INJECTION, U.S.P.

(50 mg. per ml.)

Bromsulphalein (BSP), one of the most sensitive diagnostic agents for evaluating liver function, is now available in a new Disposable Unit. Each "unit" contains: A sterile BSP syringe calibrated in milliliters and pounds (utilizing the 5 mg./kg. BSP dosage schedule), a sterile disposable needle, alcohol swab and a 7.5 or 10 ml. size ampule of BSP.

The precalibrated dosage schedule imprinted on the syringe barrel makes weight calculations unnecessary—saving time and assuring proper administration of the dye, regardless of patient-weight.

Literature on indications and dosage available on request.

The NEW BSP DISPOSABLE UNIT is supplied in 7.5 and 10 ml. sizes in boxes of 10's and 25's.

HYNSON, WESTCOTT & DUNNING, INC.

(BSP01)

BALTIMORE, MARYLAND 21201

H&WD

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV APRIL, 1965 No. 4

CONTENTS

Greetings From the Dean 171

Notes on the Gold-Headed Cane
William B. Bean, M.D. 172

Project Hope
Montague S. Lawrence, M.D., and Richard D. Liechty, M.D. 175

SCIENTIFIC ARTICLES

Risk of Atherosclerotic Coronary Heart Disease
Willard A. Krehl, M.D., Ph.D., and Robert E. Hodges, M.D. 177

Observations on the Recognition of Prediabetes and Diabetes Mellitus
Patrick D. Robertson, M.B., M.R.C.P.Ed., and Daniel B. Stone, M.B. 181

Changing Concepts in RH Isoimmunization
Clifford P. Goplerud, M.D. 187

University of Iowa College of Medicine Clinical Pathologic Conference 189

EDITORIALS

Is Your County Missing an Opportunity? . . . 196

Ten Commandments for the Professional Man . . 196

Mortality in Fractures of the Hip 197

A Preventive for the Toxic Effects of Chloramphenicol 198

Drugs and the Pregnant Patient 199

The Complete and Thorough Physical Examination 200

SPECIAL DEPARTMENTS

Letter to the Editor 201

Coming Meetings 203

President's Page 205

Law and Ethics 213

In the Public Interest . . . . . facing page 220

The Doctor's Business 221

Iowa Association of Medical Assistants . . . 223

Iowa Chapter of the American Academy of General Practice 224

State Department of Health 225

Woman's Auxiliary News 229

Month in Washington xxiv

Personals xxvi

Deaths xl

MISCELLANEOUS

Distribution of the Health-Care Dollar, 1943, 1953, 1963 201

The 1965 Annual Meeting of the AMA
Donovan F. Ward, M.D. 202

Most of These 1963 Deaths From Uterine Cancer In Iowa Could Have Been Prevented . . . 204

Lawrence J. Halpin, M.D. 206

Report on a Survey of Attitudes of Physicians With Patients in After-Care Homes
Herbert L. Nelson, M.D. 215

Macular Dystrophy 220

Aborting Staph Epidemics in Newborn Nurseries 222

Phenylketonuria 227

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor.....Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D.....Iowa City
Floyd M. Burgeson, M.D.....Des Moines
Daniel A. Glomset, M.D.....Des Moines
Robert N. Larimer, M.D.....Sioux City
Daniel F. Crowley, M.D.....Des Moines

PUBLICATION COMMITTEE

Samuel P. Leinbach, M.D.....Belmond
Cecil W. Seibert, M.D.....Waterloo
John H. Sunderbruch, M.D.....Davenport
Richard F. Birge, M.D., Secretary.....Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

Greetings From the Dean

Members of the Iowa Medical Society:

I am happy to greet you again in this annual College of Medicine issue of the JOURNAL, and to take the opportunity to tell you of what is happening in the College of Medicine.

We continue to have more and better qualified applicants for entrance to the College. The time has come for us to increase the size of our entering class, and this will require building, for our laboratories for students in the basic-science years are just large enough for our present 120 freshmen. We are planning to enlarge our entering class to 160 students, and we have requested the necessary building funds. The same expansion of space will provide augmented facilities for teaching the student nurses, pharmacists, dentists and many others who outnumber the medical students and comprise a large part of the teaching load of the College. This, too, is necessary, since the demands of these students increase as the University grows.

With a predicted 30,000 students in the University by 1980, we shall be providing instruction for between 3,000 and 3,500 persons at all levels from undergraduate-college freshmen to post-doctoral fellows. We shall, of course, continue our programs of patient care and scientific research.

As we move into this "growth spurt," we shall need to strengthen our already close ties with the medical profession in the state. Iowa has a long history of cooperative endeavor between the practicing physician and the College of Medicine. The future may demand an even closer integration to insure maintenance of strong educational programs. As an example, one can imagine that the coming development of the regional-complex type of organization may turn large medical centers and their component medical schools more toward community hospitals as training bases. Students must learn to manage the ordinary problems and illnesses of mankind, and these may not be found at the large medical centers in years to come.

At any rate, we must be alert to such possible changes, and must continue the cordial relationship and shared purposes that we now have. We at the University prize these highly.

Fraternally yours,

Robert C. Hardin, M.D.
Dean
Vice President, Medical Services

March 3, 1965

Notes on the Gold-Headed Cane

WILLIAM B. BEAN, M.D.
Iowa City

AMERICAN PHYSICIANS have not been noted for their interest in tradition. But even if one is not concerned with tradition as such, the dignity of the medical profession and its long heritage of devotion and excellence make it appropriate for each of us to look upon its traditions with something more than disparagement. Thus it seems appropriate to say a few words about the gold-headed cane, about the tradition that it represents, and about the physicians who originally carried it.

Each year at the University of California, two gold-headed canes are awarded—one of them to a physician, and the other to the outstanding senior student in the College of Medicine. In 1964, I was awarded a cane to keep for a year. It then will go to the next physician selected.

Those who see television or read news bulletins will be interested to learn that Lord Moran had the California cane in 1956-57. He was then president of the Royal College of Physicans of London, and for many years had been Sir Winston Churchill's physician. Within recent months, it was he who issued bulletins about Sir Winston during his fatal illness. In some recent years, it has been awarded to Dr. Franklin Hanger, president of the American College of Physicians, and to Dr. Paul Dudley White, Dr. Maxwell Wintrobe, Dr. Dana Atchley, Dr. Arthur Bloomfield, Dr. Hugh Morgan, Dr. Roger Lee, Dr. William Middleton, Dr. James Waring, Dr. George Dock, Dr. George Blumer and Dr. James Herrick. On separate occasions it was presented to Dr. William Kerr, who established the custom at the University of California, and to his wife.

What prompted this relatively new tradition? In 1827, William Macmichael published a book entitled THE GOLD-HEADED CANE, which purported to be an autobiography of the cane itself. It told of six people who had been its owners, beginning with John Radcliffe, in 1689, and winding up with Matthew Baillie, whose widow gave it, after his death in 1825, to the Royal College of Physicians of London, in which it is now a treasured relic.

The cane was a symbol of medical excellence and medical eminence. It was the traditional sign the physician used, and some supposed it possessed magic as a legacy from the staff and serpent of Aesculapius. In times of plague, the cane could be used to carry vinaigrette or some other material for the doctor to sniff after visiting a death room.

EDITOR'S NOTE:

Dr. Bean was awarded the gold-headed cane at a ceremony held in conjunction with the medical students' graduation exercises at the University of California, San Francisco, in June, 1964. He contributes, here, an account chiefly of the original cane, which now is a possession of the Royal College of Physicians of London. Presentations of the California cane (or, more accurately, canes) were started in 1939 by Dr. William Kerr. Many of the undergraduate winners have achieved distinction since their student days. The physicians who have been awarded it are listed below:

Herbert C. Moffitt, 1939; James B. Herrick, 1940; George Blumer, 1941; William J. Kerr, 1942; George Dock, January, 1943; Mrs. George Roos; Mrs. William J. Kerr, October, 1943; No award, 1944; James J. Waring, 1945; Langley Porter, 1946; Donald J. Frick, 1947; William S. Middleton, 1948; G. Gill Richards, 1949; LeRoy H. Briggs, 1950; Roger I. Lee, 1951; William E. Carter, 1952; Hugh J. Morgan, 1953; Arthur L. Bloomfield, 1954; Hans Lisser, 1955; Lord Moran, 1956; Nils P. Larsen, 1957; Maxwell M. Wintrobe, 1958; Dana W. Atchley, 1959; Howard P. Lewis, 1960; Chester M. Jones, 1961; Paul Dudley White, 1962; Franklin M. Hanger, 1963; William B. Bean, 1964.

Even then, a certain amount of fumigation or deodorizing seemed good treatment for sufferers from as yet unrecognized microbes and miasms.

The autobiography of the cane, then, is an intimate view of the practice of medicine as exemplified by the several owners of the cane. They were looked upon as the acme and epitome of clinical achievement by their fellow practitioners in London. It is interesting that no single one of the six holders of the original cane made any remarkable discovery. The great men to whom it might have been given—Heberden, Jenner and others—were not distinguished, however, for the wealth they gained in practice, although Jenner had a country practice which was outstanding for his hard work, his courtesy, his kindness and his excellence as a physician.

John Radcliffe, the first holder of the original gold-headed cane, studied at Oxford. He was much influenced by the school of Sydenham and by the intellectual ferment which was to give rise to the Royal Society and which was seen in the work of Boyle, Willis, Christopher Wren and many others who achieved distinction in various fields of activity. As the cane relates the story, John Radcliffe was rather an uncouth creature, stubborn or pigheaded, depending on whether one was on his side of the question or not, but apparently possessed of extraordinary capacity, great native wit and keen insight. He broke away from many of the traditional torments which passed as therapy, and treated his patients with a certain amount of fresh air and common sense, though he was not beyond heroic drugging on occasion. Whether deservedly or not, he achieved a reputation that enabled him to produce marvelous effects on his patients. Even though he insulted the Royal Family of England and was thrown out of any official capacity, he still was called upon surreptitiously when serious illness occurred. King James II, Queen Anne and others received the benefits of his therapy. He accumulated a huge fortune, and as a result of wise investment the estate he left is still a wealthy one, giving support to all kinds of charitable medical programs and helping in the training of physicians. The Radcliffe Camera, the Radcliffe Infirmary, the Radcliffe Observatory and other monuments in Oxford keep his memory green, and St. Bartholomew's Hospital each year gets several hundred pounds from his estate to "mend the poor diet of the patients."

Near the end of his life, Radcliffe turned over the cane to Richard Mead, who became a scholar as well as a fine physician. He collected a magnificent library which had as a nucleus some of the books that Radcliffe left him. He also established a huge museum. His house was open to the poorest student as well as to distinguished visitors from the continent. He seated his guests at two tables, one for his social equals and the other for clerks, students and strangers whose social rating was not so high. His library was famous throughout the continent of Europe, and visitors to London who had any scholarly interests always sought out Mead and his collection of books. Just as Radcliffe had collected an enormous fortune and lived in luxury, maintaining several households including numerous lackeys and flunkies, so Mead, after the manner of his time, provided personal endorsement and endowment for young artists and students. Such private benefactions helped advance knowledge and the fine arts at a time when there were no Ford Foundations, no Carnegie Foundations and no grants-in-aid from the government.

Probably Askew, the third holder of the cane, would not be remembered at all, had it not been for his appearance in the book THE GOLD-HEADED CANE. He was a great traveler and a learned man. He too was a great collector of books, though he left no important impress on the history of medicine. Much of the chapter in Macmichael's book deals with William Heberden, rather than with Askew. Heberden was much more famous in his day, and is still remembered for his original description of angina pectoris. We still cherish his name in the designation "Heberden's nodes."

William Pitcairn, the next holder of the gold-headed cane, got his degree at Oxford in 1749, right at the time when the Radcliffe Library was opened. He had traveled abroad extensively. He too was something of a scholar, but the fact that Pitcairn achieved outstanding success in the practice of medicine does not seem to have been the consequence of any contribution to knowledge or important publication. For a brief time, his nephew David carried on. The Pitcairns were successful but not particularly distinguished, and were given a little to hypochondriasis. On the whole, however, although they devoted much attention to their own symptoms and spent much of their time seeking health, they were fine physicians.

The last holder of the cane was Matthew Baillie, the nephew of John and William Hunter. He studied with the Hunters, and soon was lecturing and demonstrating. John Hunter taught Baillie to be a fine anatomist in his own right. Also, Baillie became a great teacher as well as clinician. He was attractive and competent, a superb teacher, and a diligent and hard worker who slaved many hours making anatomical preparations, lecturing and doing demonstrations in association with both William and John Hunter. When William Hunter died and left most of his considerable estate to him, Baillie turned over a part of it to John, since he was of the opinion that the property at Long Calderwood should remain in the Hunter family. He was a good example of the high qualifications of the best type of English physician.

THE EDITIONS OF MACMICHAEL'S BOOK

The seven editions of the book THE GOLD-HEADED CANE provide us with interesting examples of the

technical skill and artistic aspirations of printers in several periods from 1827 through 1953. The original edition is the most charming. It has the simplicity of the Georgian architecture and Hepplewhite furniture of its period. It was printed on handmade rag paper, without chemical blemishes, and is as likely to be "immortal" as any man-made product, its life expectancy being of the order of 1,000 years. (It was not until 1840 and 1850 that wood-pulp paper began to be used extensively in making books.) The type is an excellent variety of Scotch letter, and the book has some charming woodcuts for illustrations. The second edition came out the next year, and did not differ in any significant way from the first. The third edition was printed in 1884, and was the first to which Macmichael's name was attached. It was edited by Monk, who was justly famous as a historian of the Royal College of Physicians. This edition was printed on machine-made paper with a power press. The binding reflects quite clearly the rather stuffy ornateness of the Victorian period.

The fourth edition, published in this country in 1915, had an introduction by Sir William Osler. It has many features that are anything but attractive —the "deluxe" binding, pseudoparchment spine, and so forth. Stereotype reissues of that edition appeared intermittently until the late 1920's. The fifth edition came out in 1923. The type was a recutting of the Scotch face for machine composition. It was not well fitted, and the footnote type was even poorer. The sixth edition, in 1932, has a cheerful blue binding but almost all kinds of unrelated types appear in the book. They are ill fitted and have none of the charm of the better Scotch faces. Running heads and other type vary in odd disarray.

The seventh edition was brought out in 1953 by Dr. William Kerr, who reestablished the tradition of the gold-headed cane at the University of California. It is printed in a recutting of Baskerville's type, one of the greatest types in all of printing history, but unfortunately this intertype cutting is not one of the best of its kind.

A DESCRIPTION OF THE CANE ITSELF

Symbolic of the wand of Aesculapius, the physician's cane developed as a mark of his status. It had ordinary purposes, too. It was usually of considerable length, and was surmounted with a knob or a bar. Some, as I have said, contained a vinaigrette to be held to the nose to ward off vapors exuded by the sick and dying, especially in times of plague. Canes might also contain stilettoes and, on occasion, medicines. Even alcohol has been stored there for ready use. They occasionally have been used to smuggle secret documents.

Radcliffe's gold-headed cane was of a variety known as Malacca. With its long metal ferrule and gold handle, it still was only three feet four inches in length. The handle itself—two inches upright and four inches across—forms a crutch. The indented ends are fixed in place and are not meant to be removed. It is filled with heavy plaster, and probably never did contain anything else. Its shape suggests that it was used for support.

In the middle of the upper surface, the arms of Radcliffe can be found. Those of Pitcairn and of Baillie are at either end. On one side are the arms of Mead, and on the other, those of Askew. The Chippendale shields in which they were placed did not come into use in England until 1730, and since Radcliffe died in 1714, it is apparent that the arms were engraved later. Mead probably had his own and Radcliffe's put there.

The Radcliffe arms suggest that Dr. Radcliffe was entitled to that distinction, but in fact he sprang from yeoman stock. Only in later life did he put forward a claim to be descended from the ancient Radcliffe family which had lived for generations in Dilston County, Northumberland. Oxford, which had profited from his benefactions, gave him a pompous funeral, but the College of Arms admonished the University not to erect an escutcheon over or upon his monument. Dr. Poynter, chief librarian of the Wellcome Historical Medical Library, in London, tells me that none of the others were entitled to bear arms, so we must conclude that they too were hunting for an important status symbol. None of our six physicians and gentlemen who carried the gold-headed cane was armigerous, according to the rules of the College of Arms. Nor did any of them have bookplates, even those with great libraries.

I suppose everyone will have some interest in Macmichael, the man who was responsible for memorializing and perpetuating the theme of the gold-headed cane, and letting it tell its story. In having an inanimate object tell its tale, Macmichael was using a device as old as Aesop's FABLES. Such "autobiographies" were frequent in the late seventeenth and middle eighteenth centuries—John Stone's ADVENTURES OF A GUINEA, Smollett's HISTORY AND ADVENTURES OF AN ATOM, Bridge's ADVENTURES OF A BANK NOTE, and Scott's ADVENTURES OF A RUPEE. Macmichael was a Shropshire lad, born in November, 1783. His father was a small town banker. William, a scholar at Christ's Church, Oxford, got his B.M. in 1808. Feeling that the training at the Oxford of his day was not enough, he went to Edinburgh, where he studied many other things besides medicine, for among his works was a JOURNEY FROM MOSCOW TO CONSTANTINOPLE and other items, as well as STUDIES OF SCARLET FEVER and ON CHOLERA.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the JOURNAL, 529-36th Street, Des Moines, Iowa 50312.

Project Hope

MONTAGUE S. LAWRENCE, M.D., and
RICHARD D. LIECHTY, M.D.
Iowa City

More than 500 physicians and dentists have voluntarily served aboard the *S.S. Hope* on its first four trips to underdeveloped countries on three continents. Our two-month rotations in Ecuador in April and May, 1964, and in Guinea in October and November, 1964, were deeply satisfying and highly rewarding.

The idea of a people-to-people project of medical good will was conceived by President Eisenhower in 1958. Dr. William B. Walsh, a Washington, D. C., internist, was commissioned to put this idea into action. The idea took the form of a ship; an old 15,000-ton, World War II and Korean War hospital ship formerly named the *Consolation.* Taken out of "moth balls," renovated and recommissioned the *Hope,* it was given to the Project by our government, and it has since been financed by private contributions of materials and money.

In 1960 the *Hope* sailed for Indonesia, and the idea was underway. Much was learned on that first trip—international diplomacy, maritime-union negotiations and hazards of coral reefs, to name a few.

In 1962-63 the *Hope* visited Trujillo, Peru. Greeted by such Communist-inspired signs as "Cubi, si; Yanqui, No!" and treated with deep suspicion at first, the personnel of the *Hope* went quietly to work. When it sailed away, after 11 progressively more successful months, 45,000 grateful people crowded the dock, many with tears in their eyes, waving a sad but sincere farewell. The anti-U. S. signs were gone.

Guayaquil, Ecuador, a city of about 600,000 people, was its host in 1963-1964. Again, initial suspicion and distrust were dispelled as the personnel trained others to help themselves. Half a million immunizations given, 1,000 major operations performed, 750 doctors and auxiliary personnel trained in new technics, and 50,000 patients diagnosed and treated—these were among *Hope's* accomplishments.

The ship is now in Conakry, Guinea, in West Africa, a country of three million people and only 80 physicians; a country that has been under self-government for only eight years. The Project is supplementing medical care in two local hospitals of 500-bed capacity, and has a plan to relieve work loads of dispensaries in the surrounding bush areas. Patients from the above sources provide teaching material for nurses and doctors from Guinea and from surrounding countries such as Sierra Leone and Liberia.

The *Hope* has over 30 current invitations to visit underdeveloped countries. Its next visit is likely to be in Central America. Success of past missions and urgent pleas for help from so many areas indicate the need for other such ships.

TEACHING

The essence of Project *Hope's* philosophy is teaching, not service. Only by transfusions of knowledge can complex medical treatment be effectively diffused so that it remains after the ship leaves.

To this end, the *counterpart system* was initiated. Similar to the buddy system in summer camps, it worked very effectively in Ecuador. Physicians, dentists, nurses and technicians on the staff were assigned Ecuadorian counterparts. For example, each *Hope* nurse had an Ecuadorian nurse as her counterpart. Working regular shifts together facilitated a continuous exchange of knowledge of new drugs and new technics and even, perhaps, discussions of doctors' idiosyncrasies. Daily teaching conferences and seminars supplemented the routine nursing work. Similarly, Ecuadorian doctors were assigned to the *Hope* doctors. Routine rounds, clinics and conferences were held on ship and in shore-hospital wards. Ecuadorian surgeons were encouraged to perform operations with the assistance of *Hope* surgeons. Many of them were excellent technicians, but had only a superficial grasp of basic medical principles.

Ecuadorian medical personnel were rotated from all parts of the country for training aboard the ship. These applicants were chosen on a geographical and need basis by a committee of Ecuadorian physicians and dentists. We were greatly impressed by the Ecuadorian's intense desire to learn, regardless of whether they were doctors, nurses or technicians. The counterpart system is also being used in Guinea, but because the number of nurses or doctors is limited, the sessions are smaller.

SHIP AND STAFF

S.S. Hope is a complete floating hospital. With 230 patient beds, three well-equipped operating rooms, a cystoscopy unit, an x-ray department, a dental department, physiotherapy, a brace shop, complete laboratories, a blood bank and a variety of examining rooms, it is equipped to take care of almost any medical problem.

The permanent staff includes about 40 nurses, an administrator and 20-some technicians and ancillary personnel who sign on for the full 10-11 months. The chief of the medical staff and perhaps one or two other doctors are also full-time. The other 35 doctors rotate every two to four months, flying to and from the ship. A day or two of overlap assures continuity in patient care. The doctors represent practically every major specialty in the field of medicine. Two or three generalists manage clinics ashore and screen patients for admission to the ship. Project *Hope* provides transportation, board and room but no salary to rotating doctors. Some doctors have volunteered for all four trips, thus attesting to rich and rewarding experiences. An impressive array of professional talent has volunteered for Project *Hope*. Many of the doctors hold teaching positions in various medical schools, and an impressive number of nurses have advanced degrees or training. Ten or 15 nurses apply for every nurse who is accepted, and consequently the nurses are the most capable, dedicated ones whom we have ever been privileged to work with. At least three years' post-graduation experience, plus an interest in teaching, assures exceptionally high standards.

Steps are currently being taken to qualify the ship for certification by The American Hospital Association.

PROBLEMS AND REWARDS

Sorties into other cultures, into the existing network of pride and prejudice, habits and standards, have never been without special problems. The *Hope* staff has learned this lesson well.

Communist agitators have worked actively against the *Hope*. For example, pictures taken of caskets being lowered from the ship in Ecuador were printed in local Communist newspapers under the heading, "Buque de Muerte (Death ship)." Charges of Yankee medical experimentation were leveled in Peru, causing distrust and suspicion. In Guinea, only after the successful salvage of some very critical surgical patients (one child, for example, who required a colon transplant for a strictured esophagus) were other patients admitted to the ship. In many Latin American countries and also in Guinea, intense political envy and professional rivalry set the stage for both real and imagined affronts.

To counter these problems, the *Hope* has a forceful antidote. Pain, suffering and disfigurement are universal—and are understood by every culture, in whatever tongue. They transcend the politics and the geography.

When the Ecuadorians and Guineans understood that we were all volunteers and that the ship was sponsored by private contributions—that *Hope* had not been sent to their countries by our government for political motives—their cooperation and response were gratifying and warm.

Quiet, efficient person-to-person, day-by-day teaching and medical care are potent diplomatic medicine. Medical missionaries had proved that in the past. But the *Hope* is different. Non-sectarian (although it has both Protestant and Catholic chaplains), it provides an up-to-date hospital environment so that highly specialized skills are taught *on our terms*, yet are still attainable by the host countries.

In Peru and Ecuador, at stations near medical schools, *Hope* personnel continue the work begun on the ship. Placement programs set up for doctors who wish to continue training in U. S. hospitals are an important mission of these stations. In Guinea, plans for such a permanent station have not been worked out as yet, but by the end of the rotation period in August, 1965, we hope that a similar program will have been instituted.

The *Hope* carries a very simple message and dispenses it to patients along with medical care: "The people of the U. S. wish you well." For the long run, in our day of increasing international tension and distrust, perhaps the most important dividend of Project *Hope* will be this understanding that the American people really do wish others well. We believe that Project *Hope*, as a symbol of that wish, may well be one of our country's most effective ambassadors.

MEET YOUR FRIENDS & COLLEAGUES

At The

1965 Annual Meeting

of the

IOWA MEDICAL SOCIETY

House of Delegates—April 11 & 14—
Savery Hotel

General Sessions & Exhibits—April 12 & 13—
Fort Des Moines Hotel

The program is reviewed on the
"Green Sheet" in this month's Journal.

Scientific Articles

Determination of the

Risk of Atherosclerotic Coronary Heart Disease

WILLARD A. KREHL, M.D., Ph.D., and
ROBERT E. HODGES, M.D.
Iowa City

STATISTICS CONSTANTLY remind us that death from coronary heart disease is still our major medical problem. The 1963 death rate from heart disease among life-insurance policyholders represented an increase, but the cancer death rate showed no change from the record set in 1962. According to the Institute of Life Insurance, heart disease was a significant factor in pushing the overall 1963 mortality rate up to 632 deaths for every one million holders of ordinary policies with U. S. life insurance companies. The most recent statistics available from the U. S. Public Health Service indicate that 546,000 people died of coronary disease in this country during 1963. Most importantly, this total included a significant number of men under 50 and in their most productive years.

Despite these alarming statistics and the undesirable trend, progress is being made through an increasing awareness by physicians of the seriousness of the problem of atherosclerosis and coronary heart disease. Progress also is being made in research laboratories and in epidemiologic studies which give new insight into the relationship between atherosclerosis and elevated lipid patterns such as cholesterol and the triglycerides. A survey conducted for the National Dairy Council by the National Research Company, of Philadelphia,[1] clearly indicated a progressively greater interest by patients in the problem of diet as it relates to blood cholesterol levels and coronary heart disease. This survey showed that 60 per cent of 511 practicing physicians make a dietary fat recommendation to their patients with elevated blood cholesterol levels. Slightly more than half of the physicians interviewed in the study believed that atherosclerosis can be prevented, and that preventive measures should be initiated early, probably before the age of 21. This, then, emphasizes the new tendency to recognize the undoubted early development of atherosclerosis at a time before any clinical signs or manifestations are present. The development of atherosclerosis remains largely unseen and unidentified, much as the major portion of an iceberg remains below the surface of the ocean.

Another major development is the recognition that although it may be difficult to make a diagnosis of atherosclerotic coronary heart disease in any given patient, it is easy and important to identify those risk factors which have been found to be related to a high incidence of coronary heart disease. A knowledge of these risk factors may be most valuable in reversing the statistical trend cited above.

It is the purpose of this paper to enumerate these risk factors and to emphasize that their determination should become part of the history taking and physical examination, particularly of men. These risk factors are: (a) elevated levels of dietary lipids, particularly cholesterol and probably triglycerides; (b) a history of a consistently high in-

take of total fat in the diet, and particularly of saturated fat; (c) excessive body weight; (d) hypertension; (e) cigarette smoking, particularly in excess of 20 cigarettes per day; (f) a family history of coronary heart disease, hypertension, stroke, diabetes mellitus or familial hyperlipemia; (g) lack of physical activity; (h) certain specific diseases in which there are known to be elevations of blood lipids, such as the nephrotic syndrome, myxedema and diabetes mellitus; (i) emotional stress and trauma; and (j) electrocardiographic abnormalities. Not only must these risks be identified, but emphasis must be placed on eliminating those factors which are known to cause or accentuate these risks.

DIET AND ATHEROSCLEROSIS

It has long been appreciated that what man eats may influence his health. Using the epidemiologic approach in populations inhabiting many sections of the world, Ancel Keys has clearly demonstrated that for most of the populations studied the frequency of coronary heart disease appears to be closely related to the proportions of total diet calories provided by fats. The generalization can also be made that no population subsisting on a diet low in saturated fatty acids has yet been found to have a high incidence of coronary heart disease or a high average level of cholesterol in the blood. Serum cholesterol, according to Keys, is directly predictive of the risk of coronary heart disease in every study. "Mathematically, all the data fit an equation in which the risk of future myocardial infarction rises as the cube of the serum cholesterol concentration," he has concluded. His excellent and far reaching epidemiologic studies emphasize that epidemiologic evidence alone can never demonstrate the chain of physical and chemical events that prove cause and effect. He fully recognizes the multifactoral aspect of atherosclerosis.[2]

The AMA Council on Foods and Nutrition has also reviewed the factors relating to the regulation of dietary fat.[3] It has provided data indicating the trend in total fat consumption in the United States since 1910. It is evident that the percentage of calories derived from fat has increased so that it now approximates 40 per cent. The distribution of fatty acids in major food groups indicates that saturated fatty acids contribute about 42 per cent of the total fat, monounsaturated fatty acids 41 per cent, and the polyunsaturated fatty acids 17 per cent.

The importance of polyunsaturated fats in the diet has been emphasized and reviewed by Kinsell.[4] He recognizes too that atherosclerosis is a disease with many causes. He further emphasizes, however, that there is no question that high concentrations of plasma lipids—i.e., cholesterol and probably triglycerides—will accelerate the progress of the disease. He points out that "in terms of practical dietetics, if one wishes to achieve and maintain relatively low plasma lipid levels, the diet should contain fish and fowl at the expense of eggs and meat, especially fat meat; vegetable fats and their derivatives at the expense of dairy fats and hydrogenated fats; and sufficient fat to supply at least 45 per cent of the calories. Needless to say, protein as well as essential vitamins and minerals must be adequate." Most people would not advocate so high a percentage of total fat from calories. For example, in an extensive study, the Anticoronary Club of New York City, initiated by Norman Jolliffe, has emphasized the use of a prudent diet which provides approximately 30-33 per cent of the total calories from fat, and strongly emphasizes the substitution of polyunsaturated fats for saturated fats to give a P/S ratio of about 1:3.[5]

Isadore Snapper in a challenging editorial "Diet and Atherosclerosis: Truth and Fiction"[6] has highlighted certain points which deserve emphasis. "The ubiquity of premature atherosclerosis can be prevented only if diets with a high P/S ratio are introduced in early childhood immediately or shortly after the child is weaned as is the custom in the orient." Dr. Snapper further notes "The myth that a daily intake of 800 cc. of milk, rich in saturated short-chain fats is mandatory for normal calcium metabolism can probably never be destroyed—this, despite the fact that most clinicians today recognize that it is dangerous to encourage children to stuff themselves with milkshakes, ice cream and other foods with unsatisfactory P/S ratios. Nothing is more difficult to try to change than national customs!" Here again we see the very strong emphasis on early implantation of dietary and living patterns which will minimize the development of pathologic lesions of atherosclerosis.

Stamler *et al.* have also reviewed the evidence regarding diet and serum lipids in atherosclerotic coronary heart disease,[7] and again point out that serum cholesterol, serum triglycerides and serum lipoprotein levels are elevated in groups of middle-aged persons with clinical coronary heart disease as contrasted with control groups. The evidence certainly is overwhelming, and comes from many sources and from many parts of the world.

As to specific levels of cholesterol which contribute to an increased element of risk, Keys has indicated that in all countries and communities in which serum cholesterol determinations in middle-aged men showed an average level over 220 mg. per cent, a problem of coronary heart disease existed. In communities in which the average serum cholesterol in this age group was below 220 mg. per cent, there was no major problem of coronary heart disease. On the basis of this and other evidence, it would seem desirable to lower the generally accepted range of normal for blood cholesterol so as not to exceed 225 mg. per cent, and possibly *an upper limit* of 200 mg. per cent for cholesterol might be a desirable objective. It is important to

emphasize the advisability of conscientiously applying diet control, including the restriction of total fat intake to approximately 30-35 per cent of total calories, increasing the polyunsaturated fatty acid content of the diet, reducing the saturated fatty acid of the diet (thereby increasing the P/S ratio) and restricting foods containing cholesterol. These measures will all contribute to a significantly lower blood cholesterol level. This worthwhile objective can be achieved by most individuals in the environment of their homes.

Another factor has received recent attention and widespread interest. It is the interrelationship between dietary fat and dietary sugar (particularly sucrose), and atherosclerotic coronary heart disease. Yudkin[9, 10] has reviewed the dietary histories of large populations and has provided convincing evidence to show that national levels of consumption of fat and of sugar have closely similar effects. Yudkin has suggested that statistics relating fat intake to coronary heart disease or to diabetes mellitus in different populations may therefore express only an indirect relationship, and that the causal relationship may actually be with sugar. A further investigation of this problem in subjects with peripheral arterial disease or with a recent first myocardial infarction showed that such patients had a significantly greater sugar consumption than did control subjects. Yudkin is of the opinion that a high consumption of sugar is an important factor in the causation of myocardial infarction and of peripheral arterial disease.

These observations are worthy of consideration, and certainly point up a multifactoral aspect of diet with respect to atherosclerotic coronary disease. At this stage of development it is impossible to do more than to follow this work with interest. Some experimental evidence suggests that increasing the intake of sucrose may increase the levels of serum lipids in bloods.[9, 10]

Ian Macdonald has compared the effects of sucrose and corn starch on the lipids of young men. Sucrose raised the concentration of cholesterol, but starch lowered it.[11]

THE RISK OF OBESITY AND INCREASED BODY WEIGHT

A number of epidemiologic studies have compared the relationship between body weight and build and such factors as wrist circumference with proneness to coronary disease. Gordon has reviewed recent concepts of the biochemistry and physiology of obesity.[12] Dawber, Kannel and coworkers have also provided extensive evidence from the Framingham Study which identifies the risk factors involved in the development of coronary heart disease. These factors are those which were outlined in the introductory section of this paper.[13, 14] Unquestionably, overweightedness or obesity increases the individual's susceptibility to may diseases including coronary heart disease. However, if one excludes patients with hypertension or diabetes mellitus (both of which are common in the obese), then obesity has relatively little effect upon proneness to coronary disease. It is interesting to note that overweightedness and obesity are not always associated with increased serum levels of triglycerides or cholesterol, and this may be one factor which modifies and reduces the correlation between obesity *per se* and coronary heart disease.

HYPERTENSION

Unquestionably hypertension, classified on the basis of a systolic pressure of 160 or above and a diastolic pressure of 95 mm. Hg or above, greatly increases the risk of atherosclerotic coronary heart disease. As indicated before, hypertension has a markedly increased incidence among overweight and obese people. Therefore, it is imperative to evaluate blood pressures carefully—preferably very early and at regular intervals—to establish the presence or absence of significant hypertension. A careful history relative to the use of salt is important, since an increased ingestion of salt is a common finding in hypertension. Certainly, modern antihypertensive therapy is an excellent tool to use in reducing hypertension as a serious risk factor.

CIGARETTE SMOKING

The Framingham Study[14] clearly indicated that heavy cigarette smoking (in excess of 20 cigarettes per day) markedly increases the risk of atherosclerotic coronary heart disease. It is important to emphasize that this is a risk factor which the patient can avoid by the simple expedient of stopping cigarette smoking. In this sense, it is a reversible risk. It is imperative therefore, for the physician to use every effort to induce his patient to quit smoking cigarettes.

FAMILIAL CHARACTERISTICS AND RISK

Unquestionably one of the ideal ways to reduce the risk of coronary heart disease is to select ancestors who are free of this problem and who are also without histories of hypertension or of diseases that favor the elevation of serum lipids. Conversely, a strong family history of these problems establishes an element of risk that even further emphasizes the need for controlling such ones of the others as diet, blood lipid patterns, high blood pressure and cigarette smoking. It should therefore be pointed out that at the present time we are speaking of familial characteristics which seem to be inherited but which, for the most part, we cannot identify as genetic—not, at least, in the modern concept of genetics.

PHYSICAL ACTIVITY

The problem of excessive body weight is related more and more to the problem of reduced physical

activity as time passes. We tend to ride more and to walk less. Even the value of the game of golf has been largely destroyed through the use of carts to carry us around the golf course. Our generally reduced level of physical activity has been reflected in the reduction of the recommended daily caloric intake by the Food and Nutrition Section of the National Research Council. Unfortunately we have remarkably little scientific data concerning the role of physical activity in reducing such factors as serum cholesterol and serum triglycerides, although what evidence is at hand would indicate that physical activity would be beneficial with regard to these risk parameters. Certainly a sedentary person should be advised to develop a program of routine physical activity, whether consisting of increased daily walks, a system of exercises or sports participation adapted to his individual needs and desires.

EMOTIONAL STRESS

Much has been made of the fact that we are living in an emotionally charged environment full of stresses and strains which influence our psychological reactions. Perhaps it would be wise to adopt the philosophy advocated by Sir William Osler to live our lives in day-tight compartments in each of which we try to do the best job possible. Certainly Osler's philosophy of *equinemitas* would do much to quiet the emotional storms by which we are constantly buffeted. It has been most difficult indeed to evaluate the place of emotional stress as a risk factor in atherosclerotic coronary heart disease, although it has been demonstrated that stressful situations may elevate blood lipid patterns.

COMBINATIONS OF RISK FACTORS

Unquestionably, frank hypercholesterolemia (serum levels of 260 mg. per 100 ml. or more) is associated with a three- to sixfold increase in the risk of atherosclerotic coronary heart disease. Hypertension contributes a three- to sixfold increase, and obesity, heavy cigarette smoking, diabetes mellitus, hypothyroidism and kidney damage with an associated nephrotic syndrome are also associated with significant increases in risk. The same is probably true for individuals who habitually are physically inactive and who may be faced with a high level of emotional conflict. When combinations of these abnormalities exist, susceptibility to atherosclerotic coronary heart disease increases very significantly. For example, when hypercholesterolemia, hypertension and obesity are present (any two or all three), the risk increases several fold. Stamler[7] states, "Middle-aged men exhibiting these abnormalities, in the absence of clinically demonstrable coronary disease, have about one chance in two, or two in three, of developing frank clinical disease before age 65." They are, therefore, in a very high-risk group. Unfortunately such coronary-prone men are encountered very frequently in our middle-aged male population.

ELECTROCARDIOGRAPHIC ABNORMALITIES

Sometimes coronary proneness or the risk of coronary disease may be identified with the help of the electrocardiogram. Epidemiologic studies have indicated that nonspecific T-wave abnormalities are associated with increased coronary proneness, particularly when present in repeated tracings and when shown to be unrelated to tension, infection or metabolic disturbance. In a similar way, left-axis deviation and bundle branch block patterns are indicative of a several-fold increase in risk.[15]

It should also be emphasized that the occurrence of asymptomatic myocardial infarction may be revealed only by serial electrocardiograms.[16] It is estimated that silent types of myocardial infarction represent about 15 per cent of all infarcts.

WHAT TO DO ABOUT IT . . .

The need for wider appreciation of the risk factors involved in atherosclerotic coronary heart disease must be emphasized. The pathologic process undoubtedly starts very early in life, and the identification of risk factors similarly should begin early. Greater emphasis should be placed on the development of dietary patterns and personal habits which will minimize the development of risk. A much more positive attitude must be taken toward the prevention of coronary heart disease by giving early attention to those factors which are amenable to treatment. These are: hypercholesterolemia and obesity (through nutritional means), increased emphasis on the need for physical activity, control of hypertension and diabetes, reduction or elimination of cigarette smoking, and routine examination by the family physician. These risks contribute significantly to the development of atherosclerotic coronary heart disease. Great inroads into the mortality and morbidity associated with this disease can be made through a vigorous positive approach. Although we can do little about the inheritance of familial characteristics, where these exist, we can emphasize the control of the risk factors outlined above.

SUMMARY

Most of the risk factors associated with the development of atherosclerotic coronary heart disease have been reviewed, and the importance of early identification of these risks has been emphasized. The catastrophe of myocardial infarction is not something which just happens, but is the end result of a pathologic process, clinically unseen and in most cases pathologically undemonstrated. A vigorous effort must be made to identify these risk factors in our young people, and to emphasize the mechanisms by which their deleterious effects can be reduced.

REFERENCES

1. American Heart Association—Survey conducted for the National Dairy Council by the National Research Company, Philadelphia, Pa. December, 1963. Memorandum, July 28, 1964.
2. Keys, Ancel: Epidemiological aspects of atherosclerosis and diet. Geriatrics, **19**:542-550, (Aug.) 1964.
3. Regulation of Dietary Fat; report of the American Medical Association Council on Foods and Nutrition. J.A.M.A., **181**:411-429, (Aug. 4) 1962.
4. Kinsell, L. W.: Importance of polyunsaturated fats. Geriatrics, **19**:551-553, (Aug.) 1964.
5. Rinzler, S. H.: Nutrition in relation to heart disease. Arch. Environ. Health (Chic.), **5**:60-65, (July) 1962.
6. Snapper, I.: Diet and atherosclerosis: truth and fiction. Amer. J. Cardiol., **11**:283-289, (Mar.) 1963.
7. Stamler, J., Berkson, D. M., Young, Q. D., Lindberg, H. A., Hall, Y., Mojonnier, L., and Andelman, S. L.: Diet and serum lipids in atherosclerotic coronary heart disease; etiologic and preventive considerations. Med. Clin. N. Amer., **47**:3-31, (Jan.) 1963.
8. Keys, A.: Diet and development of coronary heart disease. J. Chronic Dis., **4**:364-380, (Oct.) 1956.
9. Yudkin, J.: Dietary fat and dietary sugar, in relation to ischaemic heart-disease and diabetes. Lancet, Vol. II, July 4, 1964, pp. 4-5.
10. Yudkin, J., and Roddy, J.: Levels of dietary sucrose in patients with occlusive atherosclerotic disease. Lancet, Vol. II, July 4, 1964, pp. 6-8.
11. Macdonald, I., and Braithwaite, D. M.: Influence of dietary carbohydrates on lipid pattern in serum and in adipose tissue. Clin. Science, **27**:23-30, (Aug.) 1964.
12. Gordon, E. S.: New concepts of biochemistry and physiology of obesity. Med. Clin. North America, **48**:1285-1306, (Sept.) 1964.
13. Dawber, T. R., and Kannel, W. B.: Susceptibility to coronary heart disease. Mod. Conc. Cardiov. Dis., **30**:671-676, (July) 1961.
14. Kannel, W. B., Dawber, T. R., Kagan, A., Revotskie, N., and Stokes, J., III: Factors of risk in development of coronary heart diseases—six-year follow-up experience. Framingham Study. Ann. Intern. Med., **55**:33-50, (July), 1961.
15. Stamler, J., Lindberg, H. A., Berkson, D. M., Shaffer, A., Miller, W., and Poindexter, A.: Prevalence and incidence of coronary heart disease in strata of labor force of Chicago industrial corporation. J. Chron. Dis., **11**:405-420, (Apr.) 1960.
16. Lindberg, H. A., Berkson, D. M., Stamler, J., and Poindexter, A.: Totally asymptomatic myocardial infarction: estimate of its incidence in living population. AMA Arch. Intern. Med., **106**:628-633, (Nov.) 1960.

Observations on the Recognition of Prediabetes and Diabetes Mellitus*

PATRICK D. ROBERTSON, M.B., M.R.C.P.Ed., and DANIEL B. STONE, M.B.
Iowa City

PEOPLE WITH PREDIABETES have no symptoms, and tests of their carbohydrate metabolism are normal. Many patients with mild diabetes have no symptoms, and their apparent normality may make the early recognition of diabetes difficult. Although physicians are continuing their efforts to treat the patient with fully developed diabetes, they are becoming increasingly aware of the need for early recognition of diabetes, and of the importance of observations on early diabetic manifestations. In this paper our purpose is to discuss some of the recent concepts of the evolution of diabetes and to describe the recognition of the disease at various stages.

STAGE I—PREDIABETES

The prediabetic state exists in the time between conception and the first abnormal glucose-tolerance test. The application of this term to a patient is an attempt to predict that he will develop diabetes in the future. Obviously, the diagnosis can only be shown to be correct in retrospect, that is, when the patient eventually develops diabetes.

TABLE I

CLASSIFICATION OF DIABETES MELLITUS INTO STAGES

Stage I	Prediabetes
Stage II	Latent Diabetes
Stage III	Chemical Diabetes
Stage IV	Overt Diabetes

During the last few years, investigators have become increasingly interested in observations on people with prediabetes. The reason for this interest is that different investigators have recognized somatic abnormalities in this group of people. These observations may influence concepts of the cause of vascular disease which so frequently develops in the patient with chronic clinical diabetes. The recognition of physical changes in patients with prediabetes (those who have no evidence of abnormal carbohydrate metabolism), suggests the possibility that some of the so-called complications of prolonged clinical diabetes may be inherent parts of the diabetic state rather than being "complications" of diabetes itself.

The abnormalities which have been observed in people with prediabetes include the characteristic

* This work was supported in part by U. S. Public Health Service Grant T1 AM 5080.

diabetic nodular lesion in the renal glomerulus,[1] changes in the glomerular basement membrane and in the afferent and efferent glomerular vessels, changes in the vascular lability of the capillaries of the ear lobe,[2] increased venular-arteriolar ratio in the conjunctiva,[2] and abnormalities of the arterial pulse wave.[3]

By definition, a person cannot be recognized to have prediabetes by any tests of carbohydrate metabolism. The usual clinical tests for the recognition of diabetes are all normal in these people, including urine tests, standard glucose-tolerance tests, cortisone glucose-tolerance tests, and rapid intravenous glucose-tolerance tests. People with prediabetes also have normal levels of serum cholesterol and triglycerides, plasma free fatty acids, and glycoproteins. Various investigators have observed that special procedures, usually conducted only in research laboratories, may yield findings which suggest—but are not diagnostic of—the prediabetic state. These abnormalities include an increased concentration of serum sialic acid,[4] increased concentrations of plasma synalbumin insulin antagonist,[5] an increased concentration of insulin-like activity in the blood,[6] and incomplete dissociation of the insulin complexes after intravenous glucose.[7]

In certain circumstances the physician can presume that the prediabetic state exists in patients with normal carbohydrate tolerance. Some of these patients are:

1. The individual is the identical non-diabetic twin of a diabetic patient.

2. The individual has close relatives who have diabetes mellitus. The probability that an individual is genetically prone to develop diabetes[8] is approximately 100 per cent for people both of whose parents have diabetes mellitus; between 50 and 80 per cent for people with one diabetic parent and a diabetic sibling, or with one diabetic parent and a diabetic grandparent of the other, non-diabetic parent, or with one diabetic parent and a diabetic sibling and a diabetic grandparent of the other, non-diabetic parent; and between 30 and 40 per cent when the diabetic relatives are two grandparents (not spouses), or when one parent and a first cousin on the non-diabetic parent's side have diabetes mellitus.

3. The individual is a woman with an abnormal obstetrical history.
   a. A woman who has delivered babies weighing more than 10 pounds. Moss and Mulholland[9] observed that approximately 20 per cent of prediabetic mothers had babies weighing more than 10 pounds, as compared with an expected incidence for the general population of about 2 per cent. Jackson[10] observed that approximately 60 per cent of diabetic mothers gave histories of giving birth to at least one baby weighing more than 10 pounds at birth in the 10 years preceding the diagnosis of diabetes.
   b. A woman whose offspring have had increased perinatal mortality.[11]
   c. A woman who has had frequent miscarriages.
   d. A woman who has had repeated toxemia of pregnancy.
   e. Possibly, a woman with a history of hydramnios, the delivery of premature infants or of infants with congenital malformations, and possibly a woman who has had excessive lactation.

4. The individual may be obese.[12] The development of diabetes seems more likely to be associated with the duration of obesity rather than its extent.[13]

5. The individual has the typical vascular manifestations of diabetes, but hasn't yet developed carbohydrate intolerance.

STAGE II—LATENT DIABETES

People with latent diabetes demonstrate carbohydrate intolerance in conditions of stress, in contrast to those with prediabetes, who can never be observed to demonstrate carbohydrate intolerance. The typical vascular manifestations of diabetes may also be found in latent diabetes.

The term *latent diabetes* characterizes:

a. A person with a normal glucose tolerance test who is known to have had a diabetic glucose-tolerance test at some time during pregnancy, infection or other stress, or when obese, and
b. A person who has abnormal blood-glucose responses (similar to those found in diabetes mellitus) to provocative tests, such as a cortisone-augmented glucose tolerance test.

Pregnancy, and other "stressful" situations such as treatment with cortisone or an acute infection, may provoke temporary diabetes and unmask the patient with latent diabetes. In normal women, a number of factors in pregnancy tend to cause carbohydrate intolerance.[14] For this reason it is desirable to extend the criteria for a normal glucose-tolerance test in the pregnant woman. Recently O'Sullivan and Mahan[15] reported the result of glucose tolerance tests in over 900 pregnant women. They followed these women for at least eight years after the original glucose-tolerance test performed during pregnancy. The technic of the glucose tolerance test was to give a loading dose of 75 Gm. of glucose after an overnight fast preceded by three days of normal food intake, and to collect specimens of venous blood before the

glucose load, and thereafter at one, two and three hours. After statistical evaluation of their observations, they suggested that the glucose tolerance test in a pregnant woman should be regarded as abnormal if any two values exceeded the following: fasting 90 mg. per cent; 1 hour, 165 mg. per cent; 2 hours, 145 mg. per cent; and 3 hours, 125 mg. per cent. O'Sullivan and Mahan observed that approximately 16 per cent of the women whose glucose tolerance test results were abnormal by these criteria developed clinical diabetes mellitus during the eight years following pregnancy, and from life tables, they predicted that approximately 29 per cent of women exhibiting such carbohydrate intolerance could be expected to develop frank diabetes ultimately.

A number of investigators have used a steroid-augmented glucose tolerance test in order to detect patients with Stage II or latent diabetes.[16-18]

Fajans and Conn[17, 20] used the following technic in a cortisone-modified glucose tolerance test. After the performance of a standard oral glucose-tolerance test, 100 mg. of cortisone acetate (or 125 mg. if the body weight is greater than 160 pounds) is given orally in two evenly divided doses 8½ and two hours before a second glucose tolerance test. A "negative" cortisone glucose-tolerance test is defined as one in which the two-hour blood sugar concentration is less than 140 mg./100 ml. A "positive" cortisone glucose-tolerance test is one in which a two-hour blood glucose concentration is, or exceeds, 140 mg./100 ml.

Steroid-augmented glucose tolerance tests appear to be of some value in indicating the patient with Stage II or latent diabetes. These tests frequently fail to do so, however, and in older people —or during pregnancy—they may appear falsely positive unless the criteria for abnormal blood-glucose concentrations are raised. Only prolonged follow-up over many years will determine the value and reliability of the steroid glucose-tolerance tests in predicting future diabetes.

STAGE III—CHEMICAL DIABETES (SYNONYMS: ASYMPTOMATIC DIABETES OR SUB-CLINICAL DIABETES)

Patients with Stage III or chemical diabetes have no symptoms, but may have the typical vascular manifestations of diabetes. The diagnosis can be made only through the use of laboratory tests. Although diabetes mellitus is a disease which causes abnormal metabolism of carbohydrate, protein and fat, all the laboratory tests in routine use measure the abnormality only in carbohydrate metabolism. The various diagnostic tests in current use are as follows:

Urine Tests: Glycosuria does not necessarily indicate that a patient has diabetes. Nor does the absence of glycosuria exclude the diagnosis of diabetes. West and his colleagues[19] have reported observations which suggest that at least 50 per cent of patients with mild diabetes will not be recognized if testing for glycosuria is the only method used. The occurrence of glycosuria indicates the need for further investigation, for glycosuria implies that the renal threshold for glucose has been exceeded. This may occur, of course, not only in diabetes mellitus but in other conditions such as renal glycosuria and alimentary hyperglycemia.

The Recognition of Glycosuria. (a) Clinitest* tablets. The color change given when Clinitest tablets are used depends upon the reduction of alkaline copper sulfate. A color change with the Clinitest tablet occurs both with glucose and with other sugars such as lactose or pentose, or with other reducing substances such as salicylates. Of the clinical methods for routine daily estimation of the quantity of glucose in the urine, Clinitest tablets appear to have certain advantages, for they are more accurately used by many patients.

(b) Tes-Tape.** The color change with Tes-Tape depends upon an enzymatic reaction involving glucose oxidase. Tes-Tape is specific; it changes color only with glucose. In mass diabetic surveys, or for routine use in the physician's office for the detection of glycosuria, Tes-Tape has clear advantages.

Blood Sugar Levels. The use of venous blood and a chemical technic which measures true glucose rather than total reducing substances is becoming more widespread. When a patient has been fasting, samples of capillary blood contain approximately the same concentration of glucose as samples of venous blood. After meals, however, the difference between the concentrations of glucose in capillary and in venous blood varies from 25 to 50 mg./100 ml., and there is no convenient formula for determining what the difference may be in any one person at any specific time after the ingestion of food. In the daily management of the diabetic patient, samples of capillary blood give a satisfactory indication of metabolic control. In attempts to diagnose diabetes, however, most experts use specimens of venous blood.

The difference between "true glucose concentrations" and "concentrations of total reducing substances" (including ascorbic acid, ergothioneine and glutathione) is approximately 20 mg./100 ml. In this paper we shall refer to true glucose concentrations. Physicians who use laboratory methods such as the Folin-Wu method, which measure total reducing substances, should add 20 mg. to the figures we quote.

Fasting Blood. The concentration of glucose in a specimen of blood from the fasting patient has limited value in the diagnosis of mild diabetes.

---

* Ames Company, Inc.
** Eli Lilly and Co.

Most patients with Stage III or chemical diabetes have normal fasting blood sugars. Most authorities agree that a fasting blood sugar concentration of greater than 120 mg./100 ml. indicates diabetes mellitus.

POSTPRANDIAL BLOOD GLUCOSE

Many problems confront the physician who wishes to use the concentration of blood glucose after a meal as the criterion for the diagnosis of diabetes. The variables include the size of the meal which has been ingested, the time after food at which the specimen of blood is withdrawn, and the difficulty in choosing one particular concentration of glucose as the border between the nondiabetic person and the diabetic state. For specimens of blood taken one hour after a meal, various investigators have suggested, as a dividing concentration, figures which range from 130 to 180 mg./100 ml. The problem is one of specificity *versus* sensitivity. When the critical figure is set at a low level, the postprandial blood-sugar determination is extremely sensitive in that it will indicate most diabetic patients, but it lacks specificity in that it will give falsely positive results. When the critical figure is set at a higher level, however, the test will lack sensitivity in that diabetic patients may be missed, but it will gain specificity in that most people with abnormal levels will have diabetes.

The single postprandial specimen is of most value in mass detection drives for diabetes. In individual patients, the test is useful in more severe diabetes. Most investigators agree that one hour after a meal rich in carbohydrate, a blood sugar concentration greater than 130 mg./100 ml. indicates *probable* diabetes mellitus. A concentration of greater than 180 mg./100 ml. is diagnostic for diabetes. A concentration of less than 130 mg./100 ml. *probably excludes* diabetes. Most investigators regard the range of 130 to 180 mg./100 ml. as suspicious, and follow such a report with a standard oral glucose-tolerance test. Clearly, if the physician suspects that a patient may have mild diabetes or may have Stage III or chemical diabetes, he should perform an oral glucose-tolerance test initially.

Other difficulties make the single postprandial specimen unreliable in the diagnosis of mild diabetes. These difficulties include the influence of aging, rapid absorption of carbohydrate from the intestine, and liver disease. In middle-aged and old people, the normal range of blood-glucose values may extend substantially higher than has previously been considered normal. With unusually rapid absorption of carbohydrate from the gut, which may occur following gastric surgery for peptic ulceration or in thyrotoxicosis, patients may have unusually high levels of blood sugar following a carbohydrate meal. This does not necessarily indicate either latent or mild diabetes. However, in an otherwise healthy individual, Fajans[20] has stressed the prognostic importance of an oral glucose-tolerance curve with a high peak at a half hour or one hour, and a normal two-hour blood sugar level. Careful follow-up of such a patient may show a transition to a curve diagnostic of diabetes mellitus at a later date.

THE ORAL GLUCOSE TOLERANCE TEST

The oral glucose-tolerance test is the most useful one currently available for the diagnosis of diabetes. There are minor differences in the ways the test is done in various centers, however, and in the criteria which are used to interpret the results. During recent years, there has been considerable controversy about the dose of glucose which should be employed, the time at which specimens should be taken, and the criteria for interpretation. These controversies have not been resolved.

We have used the technic of Fajans and Conn.[17, 20] The patient should not be bedfast either before or during the test, should not be undergoing physical stress such as from an infection or a recent surgical operation, and should have eaten well for three days before the test. Although a diet containing 300 Gm. of carbohydrate daily for three days before the test may not be absolutely essential, it has seemed to us a reasonable precaution to take. After the withdrawal of a specimen of blood after an overnight fast, the patient takes 75 Gm. of glucose by mouth, and then blood specimens are taken every half hour for two hours. With doses of glucose greater than 75 Gm., some patients tend to vomit, and such loads of glucose have no demonstrable advantage.

In interpreting the glucose tolerance test by this technic, we have employed the criteria of Fajans and Conn (Figure 1).

The combination of a one-hour value greater than 160 mg./100 ml. *and* a 1½-hour value greater than 140 mg./100 ml. *and* a two-hour value greater than 120 mg./100 ml. is considered diagnostic of diabetes. A curve in which all points lie below the lower border of the triangle in the figure is considered indicative that the patient does not have diabetes. Curves which pass through the shaded triangle in the figure indicate probable diabetes.

There is still much difference of opinion concerning the interpretation of mild abnormalities of glucose tolerance. The data of West and his colleagues,[19] for instance, indicate the need for caution in interpreting the results of a single glucose-tolerance test if those results are neither clearly abnormal nor clearly normal, for there may be much day-to-day variation in response to orally administered glucose. There is also a general shift in distributions of glucose tolerance values towards higher levels in older people as

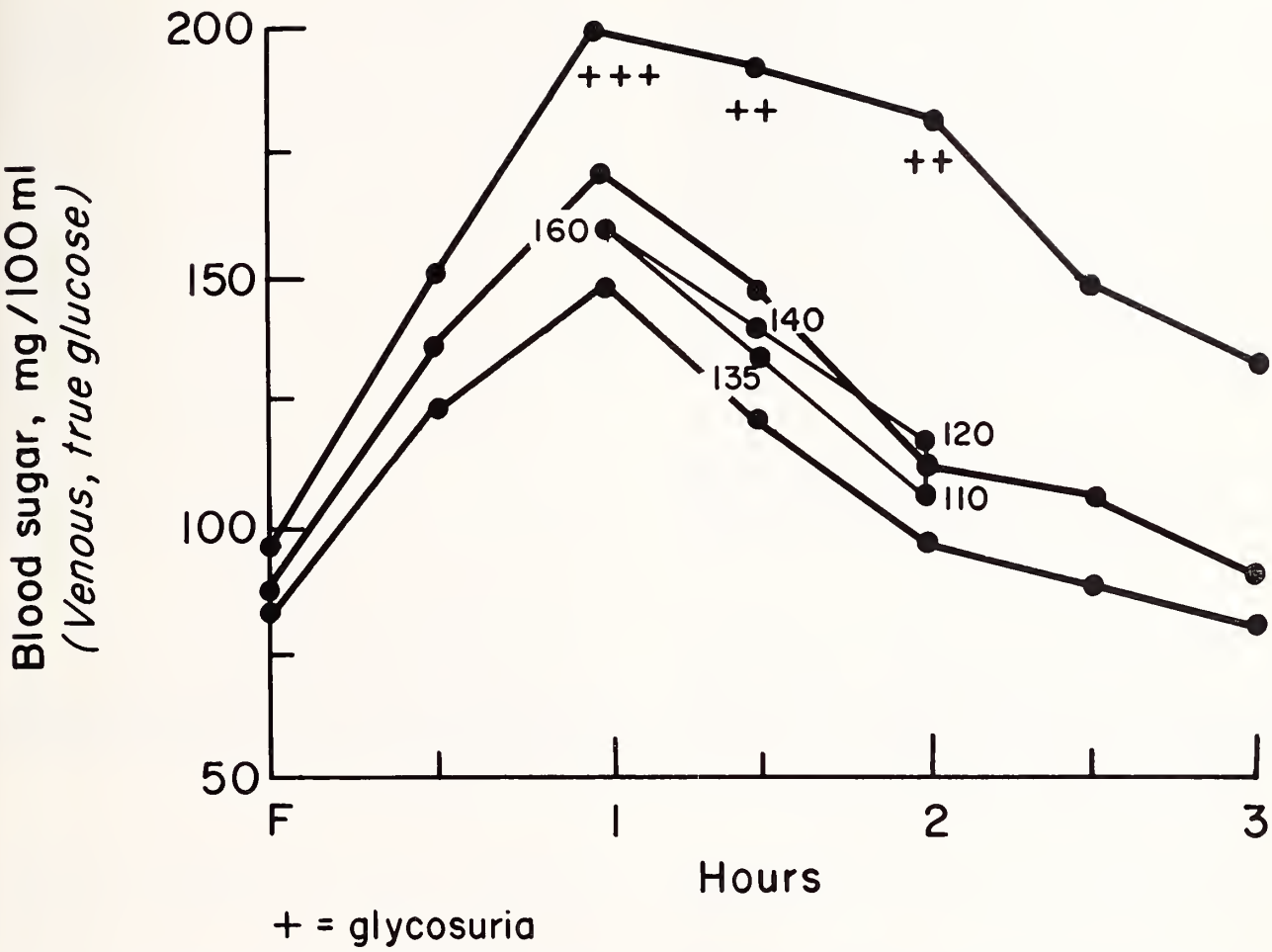


Figure 1. Interpretation of the oral glucose-tolerance test.[20] The triangle illustrates the diagnostic criteria discussed in the text. The top curve represents diabetes, the lower curve represents normality, and the curve running through the triangle represents probable diabetes.

compared with younger adults[19] which suggests that the upper limits for fasting blood-glucose in elderly people may have to be extended to a concentration much greater than the normal range for young adults.

THE RAPID INTRAVENOUS GLUCOSE-TOLERANCE TEST

The rapid intravenous glucose-tolerance test, performed over one hour, seems to have several advantages over the oral glucose-tolerance test. It is unaffected by variations in the intestinal absorption of glucose, and it is therefore more likely to give an index of peripheral utilization. However, other factors influence the removal of glucose from the blood stream:[21, 22] diffusion of glucose into the extracellular space; renal excretion (which is small); and hepatic storage and production of glucose. The test produces a single numerical index of the rate of blood-glucose clearance; and deviations of this index from normal are simpler to record than are slight abnormalities of an oral glucose-tolerance test curve. With the intravenous test there is a clear separation of normal from abnormal, in contrast to the uncertain reproducibility of the oral glucose-tolerance test, and the results of the test are reproducible in any one individual.

Against these advantages, it has been suggested that the intravenous test is less physiologic than the oral test which measures carbohydrate tolerance under the same route of administration as the daily food. Furthermore, it has been demonstrated that orally-administered glucose has a greater insulinogenic effect than intravenously administered glucose.[23]

We do the test according to the method and criteria of Amatuzio and his colleagues,[24] using increment blood-sugar values over mean fasting

values.[25] The details are given in the footnote* on this page. The test measures the rate of fall of blood-glucose increment concentrations over a period of one hour after an intravenous dose of 25 Gm. has been given. In normal subjects the rate of fall is found to be 3 to 4.84 per cent per minute, and in diabetes the range is from 0.23 to 2.46 per cent per minute. Results in the equivocal range of 2.46 to 3 per cent per minute suggest a need for further examination at a later date. These results are expressed as the Increment Index,[25] but there are other ways of formulating the rate of blood-glucose fall in mathematical terms.

There is still much work to be done in assessing the true value of this test, but it is being used with increasing frequency in many centers.

STAGE IV—CLINICAL DIABETES

People with Stage IV, or clinical diabetes have the symptoms or the complications of diabetes, and have abnormal glucose-tolerance tests.

CONCLUSION

Diabetic patients pass through four stages in the natural history of the disorder: Stage I, prediabetes; Stage II, latent diabetes; Stage III, chemical diabetes; and Stage IV, overt or clinical diabetes.

Prediabetes cannot be diagnosed by tests of carbohydrate tolerance. Special clinical observations may indicate the likelihood of prediabetes.

People with latent diabetes have normal glucose-tolerance tests. They may develop obvious carbohydrate intolerance in a stressful situation, or during a cortisone- or steroid-augmented glucose tolerance test.

A patient with Stage III or chemical diabetes may have no glycosuria, a normal fasting blood sugar, and a normal postprandial blood sugar. Chemical diabetes is best diagnosed by the oral glucose-tolerance test.

Stage IV or clinical diabetes is the fully developed form of diabetes mellitus. These patients have symptoms or complications of diabetes, and can always be recognized by the use of the oral glucose-tolerance test. They will be frequently recognized through the use of postprandial blood-sugar estimations, often through the use of fasting blood sugar estimations, and frequently by urinalysis.

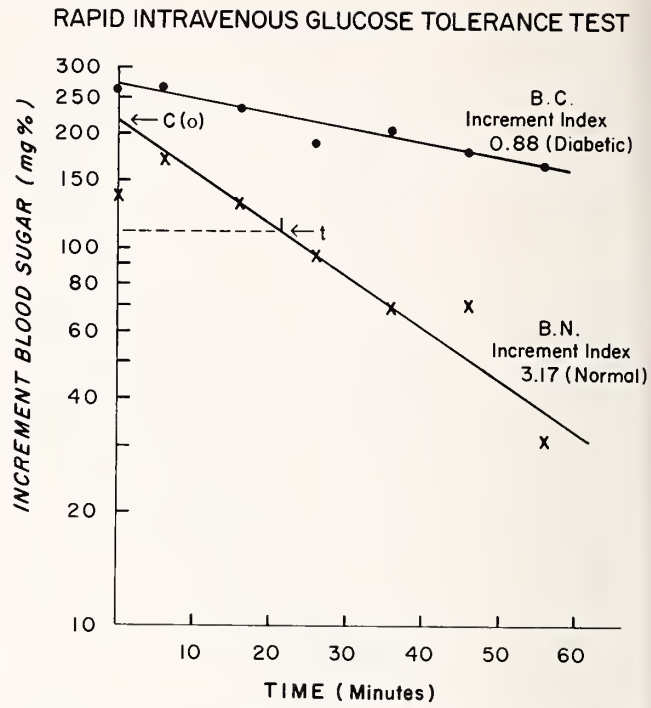


Figure 2. The intravenous glucose-tolerance test.[24, 25] The top curve represents the rate of fall of blood-sugar increment values in a diabetic patient (B. C.), with an abnormal Increment Index. The lower curve is from a normal patient B. N. The letter t indicates the time taken for the blood sugar value, C(o), to fall by half.

* Preparation of the patient is the same as for the oral glucose-tolerance test. Capillary blood samples are suitable for this test, and they may be obtained from an ear lobe which is kept moist with a heparin sponge, or from the fingertip. After we have taken two fasting blood-sugar samples, 25 Gm. of dextrose (50 ml. of 50 per cent dextrose solution) are given intravenously over 4 minutes. We add 10,000 units of heparin to the dextrose solution to lessen the chance of chemical venous thrombosis. Capillary blood samples are then taken at 4 minutes after completion of the injection, and at 10 minutes, 20 minutes, 30 minutes, 40 minutes, 50 minutes and 60 minutes. When we record the results, the 4-minute blood sample is regarded as zero (4 minutes are allowed for blood mixing), and the other samples are corrected to 6 minutes, 16 minutes, 26 minutes, 36 minutes, 46 minutes and 56 minutes. The blood-sugar increment values over the mean fasting level are plotted on a semi-logarithmic scale, as shown in Figure 2. A line is then drawn to pass through as many of the blood sugar level points as possible. Values at either end of the line are slightly less reliable than those in the middle 30 minutes. The concentration of blood glucose where this line cuts the vertical axis is noted, C(o), and the time (t), taken for this value to fall by half, is simply found. The Increment Index is calculated from the following end equation (for full details see the papers of Amatuzio and Duncan[24, 25]).

$$\text{Increment Index} = \frac{\text{Log}_e\ 2 \times 100}{t}$$

$$= \frac{69.3}{t}\ \text{mg.\% per minute}$$

Example: In patient B. N., the line cuts the vertical axis at 220 mg. per cent, and the time taken for this concentration to fall by half (110 mg. per cent) is 21.8 minutes. Therefore

$$\text{Increment Index} = \frac{69.3}{21.8} = 3.17\ \text{mg.\% per minute}$$

REFERENCES

1. Daysog, A., Jr., Dobson, H. L., and Brennan, J. C.: Renal glomerular and vascular lesions in prediabetes and in diabetes mellitus; study based on renal biopsies. Ann. Int. Med., **54**:672-684, (Apr.) 1961.

2. Camerini-Davalos, R. A., Caulfield, J. B., Rees, S. B., Lozano-Castaneda, O., Naldjian, S., and Marble, A.: Preliminary observations on subjects with prediabetes. Diabetes **12**:508-518, (Nov.-Dec.) 1963.

3. Lax, H., and Feinberg, A. W.: Abnormalities of arterial pulse wave in young diabetic subjects. Circulation, **20**:1106-1110, (Dec.) 1959.

4. Camerini-Davalos, R. A.: "Long-term problems: Prediabetes," in Diabetes Mellitus: Diagnosis and Treatment, ed. by T. S. Danowski. New York, American Diabetes Assoc., 1964.

5. Vallance-Owen, J., and Ashton, W. L.: Inheritance of essential diabetes mellitus from studies of synalbumin insulin antagonist. Diabetes, **12**:356, 1963.
6. Steinke, J., Soeldner, J. S., Camerini-Davalos, R. A., and Renold, A. E.: Studies on serum insulin-like activity (ILA) in prediabetes and early overt diabetes. Diabetes, **12**:502-507, (Nov.-Dec.) 1963.
7. Antoniades, H. N., Bougas, J. A., Pyle, H. M., Camerini-Davalos, R., and Gundersen, K.: Studies on state of insulin in blood. Regulation of "free" insulin and insulin complexes in the blood of diabetic and nondiabetic subjects. New Eng. J. Med., **267**:953-957, (Nov. 8) 1962.
8. Steinberg, A. G.: Genetics of diabetes; a review. Ann. N. Y. Acad. Sci., **82**:197-207, (Sept.) 1959.
9. Moss, J. M., and Mulholland, H. B.: Diabetes and pregnancy; with special reference to prediabetic state. Ann. Int. Med., **34**:678-691, (Mar.) 1951.
10. Jackson, W. P. U.: Studies in pre-diabetes. Brit. Med. J., **2**:690-696, (Sept. 27) 1952.
11. Joslin, P., Root, F., White, P., and Marble, A.: The Treatment of Diabetes Mellitus, 10th Edition. Philadelphia, Lea and Febiger, 1959, p. 705.
12. Karam, J. H., Grodsky, G. M., and Forsham, P. H.: Excessive insulin response to glucose in obese subjects as measured by immunochemical assay. J. Amer. Diet. Ass., **12**: 197-204, (May-June) 1963.
13. Ogilvie, R. F.: Sugar tolerance in obese subjects; review of 65 cases: Quart. J. Med., (NS) **4**:345-358, (Oct.) 1935.
14. Kyle, G. C.: Diabetes in pregnancy. Ann. Int. Med., 59:Suppl. 3, July, Part 2, 1963, pp. 1-82.
15. O'Sullivan, J. B., and Mahan, C. M.: Criteria for oral glucose tolerance test in pregnancy. Diabetes, **13**:278-285, (May-June) 1964.
16. Berger, H.: Method of increasing sensitivity of glucose tolerance test. JAMA, **148**:364-366, (Feb. 2) 1952.
17. Fajans, S. S., and Conn, J. W.: Early recognition of diabetes mellitus. Ann. N. Y. Acad. Sci., **82**:208-218, (Sept. 25) 1959.
18. West, K. M.: Comparison of the hyperglycemic effects of glucocorticoids in human beings; effect of heredity on responses to glucocorticoids. Diabetes, **6**:168-175, (Mar.-Apr.) 1957.
19. West, K. M., Wulff, J. A., Reigel, D. G., and Fitzgerald, D. T.: Oral carbohydrate tolerance tests. Arch. Int. Med., **113**:641-648, (May) 1964.
20. Fajans, S. S.: "Diagnostic tests for diabetes," in Diabetes, With a Chapter on Hypoglycemia, edited by R. H. Williams, New York, Paul B. Hoeber, 1960, pp. 389-422.
21. West, K. M., and Wood, D. A.: Intravenous glucose tolerance test. Amer. J. Med. Sci., **238**:25-38, (Jul.) 1959.
22. Franckson, J. R. M., Ooms, H-A., Bellens, R., Conrad, V., and Bastenie, P. A.: Physiologic significance of intravenous glucose tolerance test. Metabolism, **12**:482-500, (May) 1962.
23. McIntyre, N., Holdsworth, C. D., and Turner, D. S.: New interpretation of oral glucose tolerance. Lancet, **2**:20-21, (July 4) 1964.
24. Amatuzio, D. S., Stutzman, F. L., Vanderbilt, M. J., and Nesbitt, H. S.: Interpretation of rapid intravenous glucose tolerance test in normal individuals and in mild diabetes mellitus. J. Clin. Invest., **32**:428-435, (May) 1953.
25. Duncan, L. J. P.: Intravenous glucose tolerance test. Quart. J. Exper. Physiol., **41**:85-96, (Jan.) 1956.

Changing Concepts in RH Isoimmunization

CLIFFORD P. GOPLERUD, M.D.
Iowa City

EXERTING CONTINUED EFFORT to decrease perinatal mortality is the responsibility of all physicians who care for obstetric patients and their neonates. At present, great emphasis is placed on "high risk" pregnancies, for it is the small percentage of patients with certain complications who account for a high percentage of fetal and neonatal deaths. Maternal isoimmunization and the associated erythroblastosis fetalis—particularly that due to Rh incompatibility—constitute one such complication. Research studies in various phases of the problem—theoretical and clinical, preventive and therapeutic—are under way in widely scattered centers.

Until recently, little has been suggested to prevent the Rh-negative patient from becoming isoimmunized, other than proper blood typing and the avoidance of mismatched blood transfusions. Work is now in progess,[1, 2] however, toward the passive immunization of such patients during the third stage of labor, in order to prevent active immunization. There is sound immunologic basis for the concept of giving antibody to the mother between the delivery of the baby and the delivery of the placenta, so that the antibody can react with the Rh antigen present on any fetal red blood cells that may enter the maternal circulation through the large sinuses at the placental site. The evidence that fetal cells can enter the circulation at that time is based on the quantitation of fetal hemoglobin and/or fetal erythrocytes in the maternal circulation. Zipursky, *et al.*,[3, 4] feel that this occurs during pregnancy, but that it occurs rarely in the third stage except following manual removal of the placenta after vaginal delivery, or in relation to this same process following cesarean section.

A clinical model of this type of protection is available in the type O Rh-negative patient whose husband is homozygous type A Rh+ or B Rh+, or AB Rh+. Such patients often remain non-immunized to the Rh factor through several pregnancies. It is postulated that any fetal erythrocytes that have entered the maternal circulation react with the normally-occurring anti-A or anti-B antibodies, and that no Rh substance is available to immunize the mother.

This mechanism, as well as the effectiveness of passive immunization against the Rh antigen, has been demonstrated experimentally by Freda,[2] using male volunteers.

Attempts have been made to "desensitize" Rh-isoimmunized patients through the use of hapten. The only success was reported by Carter[5] several years ago, and her results have not been corroborated. The use of steroids and/or ACTH during pregnancy to interfere with the antigen-antibody reaction has not been successful. Bioflavinoids have been tried and abandoned. Other substances such as glucosamines or galactosamine are known to react with the antibodies *in vitro*, and their use *in vivo* is being investigated.[6] The experimental use of penicillamine and 6-mercaptopyridoxine has also been reported.[7] It is only logical that substances similar to the immunosuppressive drugs used in patients receiving organ grafts should be tried during pregnancy in Rh-isoimmunized patients. However, such trials have failed.[8] These drugs are very toxic, so their use is purely experimental.

For a long time there was controversy concerning the early delivery of isoimmunized patients. The pendulum swung from delivering the infants prematurely and incurring a loss of mildly affected babies from prematurity, to awaiting the spontaneous onset of labor and sustaining a loss of term- or near term-sized hydropic infants *in utero* or during the early neonatal period. The concept of selective premature and pre-term delivery as advocated by Boggs, *et al.*,[9] McElin, *et al.*,[10] and Goplerud[11] was successful in improving perinatal salvage. However, the basis for such a program is an ability to predict the severity of the fetal disease *in utero*. Antibody titers and past obstetric performance, plus the husband's genotype and the clinical course of the particular pregnancy, were the parameters on which selections were made. None of these is consistently accurate. Studies of urinary estrogen excretion,[12, 13] urinary pregnanediol excretion[14] and urinary[15, 16] and serum[17, 18] gonadotrophin levels have brought up interesting questions concerning the pathophysiology of this disease, but have not been specific enough in assessing the status of the fetus *in utero*. Therefore, they have not told us which patient should be delivered early.

Although studies of amniotic fluid obtained by transabdominal amniocentesis from Rh-isoimmunized patients was reported in 1952 and 1956 by Bevis,[19, 20] and in 1957 by Walker,[21] it was not until the report of Liley in 1961[22] that much interest was aroused in this mechanism of predicting the severity of fetal involvement. Liley's report led the way, and other investigators[2, 23-26] have confirmed the close relationship between the spectrophotometric analysis of amniotic fluid and intrauterine death and/or the extent of the disease in the baby. Thus, accurate predictions are available for individual pregnancies, and selective premature inductions have further increased perinatal salvage.

However, there are still a number of fetuses severely involved so early in pregnancy that they die *in utero* before it becomes practical to deliver them. Since these can now be predicted accurately, and since the dire effects on the fetus are secondary to the degree of its anemia, the pregnancy can be continued for the requisite length of time if the fetus can be supplied with Rh-negative erythrocytes. Again Liley[27] led the way by transfusing the fetus intraperitoneally while *in utero*. Since then, there have been reports of intrauterine fetal transfusions by others,[28-31] as many as four in the same pregnancy, utilizing Liley's technic with or without modifications. (Freda and Adamsons[32] have reported one case of exchange transfusion *in utero* by another technic. Although technically a success, it was followed in less than 24 hours by the onset of premature labor and delivery of an infant who succumbed because of prematurity.) Not all the transfused fetuses have survived, and it is now known that this therapy must be instituted before the development of hydrops.

From studies on the surviving babies, it is evident that the cells transfused intraperitoneally are taken into the circulatory system of the fetus. Such information is based on studies for fetal and adult hemoglobin and/or fetal and adult erythrocytes, as well as differential agglutination studies. To correct their hyperbilirubinemia, all these infants have required one or more exchange transfusions after delivery.

Amniocentesis is not without its problems. Zipursky, *et al.*,[3] have demonstrated that placental injury during amniocentesis may be followed by fetal hemorrhage into the maternal circulation—thus providing more antigenic stimulus for more maternal antibody formation. With this in mind, we should perform amniocentesis only on patients whose infants may need to be delivered early or transfused *in utero*. There is reason to believe that in those patients in whom amniocentesis is indicated, placental localization by isotope technic should be performed.

Obviously this is not the final answer, but until we can prevent isoimmunization or treat the fetal disease by some other means, an accurate prediction of the severity of fetal disease by amniocentesis, coupled with selective premature delivery and/or selective intrauterine transfusion, offers us our best means of eliminating fetal loss from erythroblastosis. All such patients need to be delivered in a location where immediate treatment is available for the baby.

BIBLIOGRAPHY

1. Zipursky, A.: Personal communication.

2. Freda, V. J. and Gorman, J. G.: Antepartum management of Rh hemolytic disease. Bull. Sloane Hosp. Wom., 8:147-158, (Winter) 1962.

3. Zipursky, A., *et al.*: Transplacental passage of foetal red blood cells and pathogenesis of Rh immunisation during pregnancy. Lancet, 2:489-493, (Sept. 7) 1963.

4. Zipursky, A., *et al.*: Transplacental foetal hemorrhage after placental injury during delivery or amniocentesis. Lancet, 2:493-494, (Sept. 7) 1963.

5. Carter, B. B., Williamson, A. C., Loughery, J. and Ingram, C. H., Jr.: Evaluation of Rh hapten. Am. J. Obst. & Gynec., **72**:655-659, (Sept.) 1956.
6. Pearse, W. H. and Hobel, C.: Inhibition of Rh antibodies. Am. J. Obst. & Gynec., **89**:46-51, (May 1) 1964.
7. Powell, C.: Discussion of paper by Pearse and Hobel. Am. J. Obst. & Gynec., **89**:51-53, (May 1) 1964.
8. Kretzschmar, R. M.: Personal communication.
9. Boggs, T. R., Jr., Moore, J., Fields, H. and Israel, S. L.: Early termination of pregnancy in Rh sensitization. Obst. & Gynec., **21**:334-338, (Mar.) 1963.
10. McElin, T. W., Buckingham, J. C. and Danforth, D. N.: Outcome and treatment of Rh-sensitized pregnancies. Am. J. Obst. & Gynec., **84**:467-476, (Aug. 15) 1962.
11. Goplerud, C. P.: Preterm delivery for sensitized Rh-negative mothers. JAMA, **184**:626-630, (May 25) 1963.
12. Taylor, E. S., Hassner, A., Bruns, P. D. and Drose, V. E.: Urinary estriol excretion of pregnant patients with pyelonephritis and Rh isoimmunization. Am. J. Obst. & Gynec., **85**:10-15, (Jan. 1) 1963.
13. Greene, J. W., Jr. and Touchstone, J. C.: Urinary estriol as index of placental function. Study of 279 cases. Am. J. Obst. & Gynec., **85**:1-9, (Jan. 1) 1963.
14. Bradbury, J. T. and Goplerud, C. P.: Unpublished data.
15. Hughes, E. C.: Relationship of chorion to fetal liver in normal and abnormal pregnancy. Am. J. Obst. & Gynec., **77**:880-894, (Apr.) 1959.
16. Goodlin, R. C.: Diagnosis and possible therapy of fetal anemia in erythroblastosis fetalis. West. J. Surg., **70**:181-184, (Jul.-Aug.) 1962.
17. Bradbury, J. T. and Goplerud, C. P.: Serum chorionic gonadotropin studies in sensitized Rh-negative patients. Obst. & Gynec., **21**:330-333, (Mar.) 1963.
18. Goplerud, C. P. and Bradbury, J. T.: Quantitative serum chorionic gonadotropin studies in abnormal pregnancy. Am. J. Obst. & Gynec., **91**:23-30, (Jan.) 1965.
19. Bevis, D. C. A.: Antenatal prediction of haemolytic disease of newborn. Lancet, **1**:395-398, (Feb. 23) 1952.
20. Bevis, D. C. A.: Blood pigments in haemolytic disease of newborn. J. Obst. & Gynaec. Brit. Emp., **63**:68-75, (Feb.) 1956.
21. Walker, A. H. C.: Liquor amnii studies in the prediction of haemolytic disease of the newborn. Brit. Med. J., **2**:376-378, (Aug. 17), 1957.
22. Liley, A. W.: Liquor amnii analysis in management of pregnancy complicated by rhesus sensitization. Am. J. Obst. & Gynec., **82**:1359-1370, (Dec.) 1961.
23. Barton, D. M. and Stander, R. W.: Physical properties of amniotic fluid in erythroblastosis fetalis. Am. J. Clin. Path., **42**:602-605, (Dec.) 1964.
24. Lewis, F., Schulman, H. and Hayashi, T. T.: Spectrophotometric analysis of amniotic fluid in erythroblastosis fetalis. JAMA, **190**:195-198, (Oct. 19), 1964.
25. Crosby, W. M. and Merrill, J. A.: Presentation at annual meeting of Central Assoc. of Obstetricians and Gynecologists, September 1964.
26. McKay, E. V.: Australia and New Zealand J. Obst. & Gynec., **1**:78, 1961.
27. Liley, A. W.: Intrauterine transfusion of foetus in haemolytic disease. Brit. Med. J., **2**:1107-1109, (Nov. 2) 1963.
28. Holman, C. A., *et al.*: Intrauterine transfusion for haemolytic disease of the newborn. Brit. Med. J., **2**:594-597, (Sept. 5) 1964.
29. McCrostie, H. H.: Intrauterine transfusion of the foetus in haemolytic disease. Brit. Med. J., **1**:885-886, (Apr. 4) 1964.
30. Bowman, J. M. and Friesen, R. F.: Multiple intraperitoneal transfusion of fetus for erythroblastosis fetalis. New England J. Med., **271**:703-707, (Oct. 1) 1964.
31. Dugan, E. R. and Taylor, W. W.: Fetal transfusion *in utero*. Obst. & Gynec., **24**:12-14, (Jul.) 1964.
32. Freda, V. J. and Adamsons, K.: Exchange transfusions *in utero*. Am. J. Obst. & Gynec., **89**:817-821, (Jul. 15) 1964.

University of Iowa
College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 34-YEAR-OLD WHITE MALE who had been suffering from hoarseness for one year had been treated for several months for "Singer's nodules." His physician had told him that he had some thickening and hyperemia of the right true vocal cord, and an area of ulceration at the junction of the posterior and anterior two-thirds. Treatment had consisted of voice rest. Seven months before admission to the hospital he had been told that his cords were normal. His hoarseness had practically disappeared four months before he entered University Hospitals, but had recurred two months later. The hoarseness had been worse during times of upper-respiratory infection and sore throat. The patient had passed a general physical examination for life insurance in the previous few months. He did not smoke or drink. He had had a tonsillectomy as a boy, and a small left-tonsillar tag had been removed several years later.

On examination, a small amount of mucopus was present on the floor of the nasal fossa. The pharynx showed slight hyperemia on the posterior pharyngeal wall. The left true cord was slightly thickened and white. The right true cord, at the junction of the anterior and the posterior two-thirds, had a large polypoid mass that extended upward to the region of the false cord. The rest of the true cord was thickened and hyperkeratotic in appearance.

The patient's blood pressure was 140/80 mm. Hg. Kolmer and Kline tests were negative. The hemoglobin was 14.7 Gm./100 ml.; the red blood cell count was 5,100,000/cu. mm.; and the white blood cell count was 12,600/cu. mm. A peripheral blood smear was interpreted as normal.

A photoroentgen of the chest was interpreted as normal. Roentgenograms of the sinuses showed normal nasal accessory sinuses.

Two days following the patient's entrance to the hospital, a Lynch suspension was carried out and papillomata were removed from the right true cord. The pathologist reported that this material was a rather poorly-differentiated epidermoid carcinoma of the larynx. The patient was then given a total of 3,900 r. of irradiation to each side

of his neck. He withstood the therapy well, and had only a minimal sore throat. He returned at three-month intervals for check-ups, and no evidence of tumor or of glandular enlargement in his neck was noted.

On examination approximately one year after treatment, he showed some swelling of the free edge of the anterior one-third of the cord. Another Lynch suspension and biopsy was carried out, and it showed only chronic inflammation and focal, atypical epithelial hyperplasia. There was some overgrowth of somewhat anaplastic epithelium, but this did not appear to invade the stroma, and it was decided that there was no definite evidence of malignancy.

The patient had several upper-respiratory infections, one of which caused noticeable laryngeal obstruction beginning two months prior to his last admission to the hospital. During and just before his reentry, he had a particularly severe acute respiratory infection, and it was followed by increasing obstruction. This final admission was 13 months after his first treatment. Examination on that occasion revealed nothing more than increasing laryngeal edema. In spite of the previously negative biopsies, it was felt that there was a strong possibility of recurrent neoplasm. When he was admitted, laryngeal obstruction had gradually increased to the point where tracheotomy was deemed mandatory. An elective tracheostomy was carried out in preparation for repeat laryngeal biopsies as soon as the acute inflammatory condition in the larynx subsided.

Shortly thereafter, while the patient was in the recovery room, the tracheostomy tube fell out, and he was returned to the operating room. The tube was reinserted, but it came out again at the completion of the procedure. The wound was then reopened, and a new tube was inserted. Postoperatively, some air was noted in the tissues over the neck and upper thorax anteriorly. The tracheotomy aspirations were frankly purulent. The patient was started on chloramphenicol because of a temperature elevation.

On the third postoperative day he still had a fever, and standing erect caused him some substernal pain. This was attributed to the extra-long tracheotomy tube impinging on the tracheal wall, and to his spasms of coughing. The tracheal aspirations were still purulent. On the fourth postoperatve day, the intratracheal length of the tube was shortened by placing about three-quarters of an inch of foam rubber sponge between the tracheotomy wound and the tube. Thereafter, the patient was able to sit up without coughing, and could swallow much more comfortably, but he still had some crepitation in the anterior neck and upper chest.

On the fifth postoperative day, the patient coughed up a large amount of fresh blood early in the morning, but when he was seen three hours later by the physician, he was comfortable and there was no further bleeding. However, seven hours following the first bleeding episode, he again had a very large hemorrhage, and attempts to stop that bleeding were futile. He died a short time later.

CLINICAL DISCUSSION

Dr. Sidney E. Ziffren, Surgery: Mr. Winders will discuss the case for the students.

Mr. R. Winders, junior ward clerk: We question the use of irradiation therapy as primary treatment for this lesion, since it was not limited to the true vocal cord. We realize that the trend in therapy for laryngeal carcinoma has changed with the passage of time, yet we believe that laryngectomy and neck-dissection constitute the treatment of choice in such a case as this. We understand that lesions limited to the true cord and not causing immobilization can be treated with irradiation, with an expected five-year survival rate of 85 per cent. However, with extension beyond the cord, such as was the case in this patient, the percentage drops significantly.

When the patient entered the hospital for the last time, he had an acute respiratory infection and an increasing laryngeal obstruction which made the performance of a tracheotomy mandatory. We believe this obstruction could have been due to a number of factors in any of a number of combinations: namely acute infection, inflammatory changes associated with recurrence of carcinoma, lymphatic obstruction secondary to recurrence, and/or irradiation changes. We do not feel that his subcutaneous emphysema was an important factor, for it is not an infrequent complication of tracheostomy. There was, however, the possibility of a tracheal perforation, with a resulting mediastinal emphysema.

We also do not believe that his postoperative infection was an important matter. It probably was due to an acute laryngeal-tracheal bronchitis, although pneumonitis and mediastinitis are possibilities.

It seems apparent that the final cause of death was uncontrollable hemorrhage into the respiratory tract, probably complicated by a secondary respiratory obstruction. The problem is to determine the possible causes for this hemorrhage. The first possibility that we considered was a recurrence of his carcinoma, with erosion into a vascular structure by contiguous spread. Despite our belief that this patient had improper therapy for his lesion, we do not believe that a recurrence, even if there was one, could have caused his fatal hemorrhage. He had had large doses of irradiation to his neck, but we doubt that recurrence so soon after treatment could have been extensive enough to cause a fatal erosion of the vessels. Metastasis seems unlikely also because there is no mention, in the protocol, of palpable cervical nodes at the time of his admission, and they are normally the first site of such a spread. We do realize, however,

that nodal involvement often is not palpable, and is discovered only by tissue diagnosis. We also tend to discount other possible causes of hemoptysis such as tuberculosis and primary bronchogenic carcinoma.

We believe the fatal hemorrhage was due to erosion through the trachea into a large vascular structure. This erosion was probably due to a number of factors—namely radionecrosis secondary to the irradation therapy, infection, and the final insult of a poorly-fitting tracheostomy tube that impinged on the weakened area.

Dr. Ziffren: Dr. Shumrick will discuss the protocol for the staff.

Dr. D. A. Shumrick, Otolaryngology: I shall begin with one of Mr. Winder's statements—the one in which he questioned the therapy that was given. There is one other queston that should be asked before one questions the therapy itself: Was the cord mobile? The answer isn't to be found in the protocol, but it is very important. I agree that with an immobile cord I wouldn't use irradiation therapy as the mode of treatment.

This is why, in describing a lesion of the larynx, we stress that the term "cancer of the larynx" is not enough. We now know that the larynx is not just a single organ. It is made up of various compartments, both on one side and on the other. These show markedly different prognoses, and their metastatic potentials are markedly different. The protocol says that the lesion extended up toward the false cord. It could have been on the false cord, or it could have been principally on the true cord and have extended up toward the false one. Did it go into the ventricle? This is something we have to ask. Remember that the floor of the ventricle is on the same level as the dorsum of the true cord, and that if it went up onto the ventricle, just a few millimeters away, the metastatic potential would be vastly different. For practical purposes, the incidence of metastasis from a true-cord lesion is zero. For a false-cord lesion, however, it rises to 25 per cent, and that, I think, is considerable when one considers the fact that the two areas are only a few millimeters apart.

In view of the emphysema, the patient may have had a mediastinitis, but I doubt it. I think he would have been much sicker than he was. Although he had his problems, he would have been much more ill and would have shown other signs leading the surgeon to suspect that complication. Infection from the tracheostomy tube? In people who need tracheostomy tubes on a chronic, though not necessarily on an acute basis, a tremendous amount of purulent, foul material emerges when the tube is first inserted. That was the main reason why this patient needed a tracheostomy tube. He was obstructed either by tumor, by a combination of tumor and infection, or by a combination of tumor, infection and x-ray changes, and we frequently see the infection that goes along with it.

Another point that I think worth mentioning is that hanging "the little silver tube" around someone's neck doesn't necessarily clear up his respiratory problems. Inserting a tracheostomy tube means introducing a foreign body into the respiratory tract. The patient then gets air that is not humidified. During the winter in this climate, the humidity is probably lower than that of the Sahara Desert. Despite the best of attempts to humidify the air and despite frequent instillations of sterile saline, the air that the patient gets isn't moist enough. Second, the air is unwarmed, and the bronchotracheal tree responds to the cold. It attempts to humidify the air in its own rather inefficient way, for we have bypassed the areas in the upper respiratory tract. In trying to humidify the air, it produces a thick, tenacious, mucoid-like material which, when the aqueous aspect has evaporated, is even more difficult to handle. The patient now has secretion problems that may be even worse than those for which tracheostomy was indicated.

I well realize that in certain instances one must insert a tube in order to clean out the airway, and I approve, but the infection that we see accompanying tracheostomy is frequently brought on by the tracheostomy tube itself.

As to the patient's final episode, I've seen about four like it, but I don't recall seeing one in a person who had undergone a total laryngectomy. The patients have always been people who had undergone tracheostomies on a temporary basis, with small incisions and the usual Jackson-type tubes. The episode always happens at night when no one is around, and the problem is what to do? One has only a few minutes. I don't think the patient actually exsanguinates; I think he literally suffocates. A large bolus of blood enters the trachea. He coughs it up, and it hits the underside of the cords, bangs down, and may lodge in the carina. It is now no longer a bolus of blood; it is a gelatinous body. It may go down into one main-stem bronchus—if he is lucky and if there is no further bleeding—or it may lodge in the carina itself, and with further exertions from the patient, who is now literally suffocating, it may well do the trick.

What I am trying to bring out is that I don't think the patient lives long enough to bleed to death, for he probably suffocates within a few moments. Now what is the cause? I'm sure we are all thinking of the erosion of a vessel. What bothers me is the time period. As I recall, this man had a tracheotomy tube for four days, and that is a pretty short time. In patients with this problem, the tube usually has been in place for a long period of time—perhaps weeks or even months. I don't remember now whether the other four patients had been irradiated or not, but I do remember that at the postmortems of two of them, all that was found was a tiny erosion a couple of millimeters in diameter, and without large-vessel involvement such as one might expect.

There are many vessels in this area. The innom-

inate, of course, is one of the first one would think of implicating. If there were an erosion through the innominate, the bleeding would be marked. Then there is the thyroid ima artery, which the anatomists tell us is present in about 10 per cent of the population. It runs up the anterior wall to the trachea. It could be eroded, since we know it complicates emergency tracheostomies quite frequently. Perhaps the tube eroded an end of this particular vessel, and it should be kept in mind. Perhaps the bleeding was venous. We have the tracheal plexus which drains the lower laryngeal region. This might have been the source of the bleeding. The patient might have eroded a very small area, experienced the bleeding and a drop in pressure, perhaps, and then might have suffocated.

If I had to make a choice, I'd probably think that the innominate artery had been riding a little high. I have brought with me a couple of tracheostomy tubes. This is the old Jackson tube. Note the 45° angle, in contrast to the angle of the Hollinger tube, which is close to 30°. Now remember that when we insert these they ride somewhat forward. The protocol mentioned that the first tube came out repeatedly, and the patient had to be taken back to the operating room to have a longer tube inserted. The man may well have had a thick bull neck and well developed supraclavicular muscles, so that the tube itself rode out quite a way. Inserting a longer tube perhaps was the only thing that could be done. Then on the third or fourth day—remember the idea about not removing a tracheostomy tube for the first three or four days—the doctors wisely braced the tube with sponge rubber, feeling perhaps that it was riding up too far anteriorly. I'm sure that no one anticipated that the patient would hemorrhage, but they braced it so that it was somewhat withdrawn.

With the Hollinger tube that we use today, you'll notice that the angle is completely different and that the tube dangles in the trachial lumen, rather than presses anteriorly. Thus the end doesn't usually touch anything. Though it perhaps may ride a little forward, it will just touch the anterior tracheal wall. The Jackson tube, of course, is used universally, but I think that little by little, people are coming to accept the Hollinger, which utilizes the same principle but has a little different angle and does ride more toward the mid-lumen. In certain cases the Hollinger is inapplicable. If it is used in patients with kyphosis, etc., it may ride on the posterior tracheal wall and then can cause trouble.

In summary, I think that this patient eroded a large vessel like the innominate artery, which perhaps ran high, or that he may well have eroded the thyroid ima artery, which is large enough to give this amount of bleeding. A bolus may have formed and lodged, perhaps, in the lower airway, and he probably suffocated rather than exsanguinated.

Dr. George R. Zimmerman, Pathology: How often is bleeding serious from a carcinoma of the larynx?

Dr. Shumrick: Not very often, if the site of bleeding is within the larynx itself. Now I'm not talking about pyriform sinus or the base of the tongue. If someone were to say, "Mr. So-and-so, a laryngeal-cancer patient, is bleeding," and if the bleeding were considerable, I shouldn't suppose that the blood was coming from this area. I should say that bleeding is very seldom a problem if the tumor is in the larynx itself.

Dr. Ziffren: Would you discuss what was found at autopsy, Dr. Zimmerman?

Dr. Zimmerman: This man did have recurrent epidermoid carcinoma of the larynx, and he had considerable edema throughout the larynx which contributed to his upper-airway obstruction. The lesion was a moderately differentiated epidermoid carcinoma. Both cords were involved, and the carcinoma extended below the cords into the subglottic portion of the larynx. It extended outward through the thyroid and the cricoid cartilages, and into the thyrohyoid muscles. No metastases were found.

Death was due to rupture of the innominate artery and aspiration of blood. The tracheobronchial tree was full of blood. There was blood in the periphery of the lung, especially in the dependent portions. There was a little blood in the upper airways and in the nose and pharynx, and there was an estimated 500 cc. of relatively fresh blood in the stomach.

There was no demonstrable infection around the innominate artery or around the tracheostomy wound. There was no primary lesion of the artery, such as an idiopathic medial necrosis which often extends from the aorta out into the great vessels. There was no demonstrable damage to the tracheal mucosa itself, except for some superficial erosion at the carina which was thought to have been agonal or terminal in nature.

One of the laryngeal biopsies showed a typical Singer's node. We can assume that the patient's early hoarseness and his early difficulty with speech had probably been due to this, and that he hadn't had carcinoma at that time. Parenthetically, I might mention that many people believe there is a causal relationship between excessive use of the voice and development of carcinoma of the true cord. There was considerable radiation reaction around the tracheostomy stoma and around the adventitia of the innominate artery. Dr. Lawrence finds irradiated large vessels normally resistant to surgical manipulation, but one still can wonder whether an irradiated artery, although normal in appearance, is as resistant to continued mechanical compression as is a normal vessel.

The lung sections showed small foci of acute bronchopneumonia. This infection explained the patient's fever, but it was not extensive or otherwise clinically significant.

Dr. Ziffren: Do you want to say anything further

about carcinoma of the larynx, Dr. Shumrick?

Dr. Shumrick: In carcinoma of the larynx during the past 10 years, I think there have been some exciting new approaches undertaken, as new knowledge has come into focus, requiring x-ray therapy either as a prime modality or in combination with surgery, and supporting the concept that the larynx is not just a single organ. I cannot stress the latter too strongly. We can't say just "carcinoma of the larynx" and then go on from there, for the prognoses for cancers of different parts of the larynx differ markedly. A good example of this is cancer of the pyriform sinus, if I may include the pyriform sinus as a part of the larynx. In a lesion of the true cord, as Mr. Winders said, an experienced x-ray therapist can expect up to 90 per cent five-year survivals. That percentage is as good as anyone can expect from surgery, either by laryngeal fissure, cordectomy or something else of that nature. However lesions of the pyriform sinus, which aren't actually very far away, offer a much poorer prognosis. But the idea that one particular area of the larynx gives a better prognosis than another allows us to do various types of conservation surgery in the larynx.

This, I think is one of the biggest breakthroughs in laryngeal surgery. No longer does a man who has a lesion of the epiglottis, and perhaps of the aryepiglottic fold, the valleculae and the base of the tongue, require a total laryngectomy. In previous years, involvement of all these areas would have forced a physician to do a total laryngectomy, with a tracheal stoma and all the problems that go with it. Subsequently, the patient would have been limited to esophageal speech, which is far from satisfactory, and his activities would have been limited for the rest of his life. Now we have various procedures by which we can remove the cancer and still leave the patient with the functioning part of his larynx.

Keep in mind the four major functions of the larynx: deglutition, respiration, protection and voice. Voice is the least of these. The other three, one must have. So we can retain these basic physiologic functions and give the man as good a prognosis as we give a patient who has undergone a total laryngectomy. We have greatly improved our treatment of laryngeal malignancies by this new approach.

What can be successfully removed, if the patient is to retain the four basic functions of the larynx? The epiglottis, the vallecula, the base of the tongue, the aryepiglottic fold, the false cord, the pyriform sinuses can be removed—all in continuity, by means of either a unilateral neck dissection or a bilateral neck dissection—and the individual can still speak, swallow, breathe and retain the protection that the larynx offers to the lower respiratory tree.

I think this has all come about through a greater knowledge of the anatomy of the larynx and a greater knowledge of the lymphatic drainage of the larynx. For example, we strongly advocate the inclusion of a neck dissection with various types of laryngeal surgery. The incidence of metastasis from a true-cord lesion—a lesion primarily in the true cord which does not extend to any related area—is almost zero. But a few millimeters above, in the false-cord area, the figure rises to 25 per cent. On the lingual surface of the epiglottis and the base of the tongue, again not very far away, it jumps to 50 per cent, and half of that 50 per cent have nodes that are nonpalpable. These were findings in a very large series of neck dissections done in continuity with various types of laryngeal surgery. The patients were examined by three physicians, none of whom knew the findings of the others, and there was complete agreement that 50 per cent of these nodes were nonpalpable. When we drop to the pyriform sinus, the figures become even worse. Ninety-two per cent of people with pyriform-sinus lesions when they first present themselves will have positive microscopic metastases in the neck, and 67 per cent of these will be non-palpable. So to do a simple laryngectomy would be to do these patients a great disservice. The neck dissection in such cases is not prophylactic; it is therapeutic. One can't pick out the nine out of 10 with positive nodes, for six of them will have non-palpable nodes. It's true that an occasional fellow will get a neck-dissection that he didn't need, but the other nine out of 10 will have operations that they did need! Failures in laryngectomy don't result just in local recurrences. The failures are more likely to be nodal metastases which were undetected at the time of operation.

We are now working on a method which really is an infraventricular laryngectomy. It is the same procedure as that which we have done for the removal of superglottic lesions, except that we go through the ventricles and leave the false cords, aryepiglottic fold and upper part of the thyroid cartilage. Through the use of the false cords alone, patients can subsequently learn to phonate and to close the pharyngeal airway for protection while they are swallowing, etc. We drop the larynx and bring the trachea up (which is a difficult thing to do), but the main thing is to drop the larynx and to do an end-to-end anastomosis. We have a whole series of animals doing very nicely, but a human being is another problem, and to date we have done only one such operation on a human patient.

I'd like to mention the laryngograms which help us to do this conservation surgery. Frequently, when we do laryngoscopy, a bulky lesion of the false cord prevents us from seeing how far down it extends. Does it go into the ventricle? Does it go to the free edge of the false cord and no farther? We can't see beyond it. Very often we can't even see the true cord. Only by the movement of the arytenoid can we tell whether the cord itself is free. Thus the laryngoroentgenogram has been a tre-

mendous help in telling us whether we can attempt the previously mentioned type of conservation surgery.

The laryngogram is done very simply. The throat is anesthetized just as it would be for laryngoscopy or bronchoscopy, and various types of radiopaque materials are used. They are instilled at the base of the tongue, and the material floats down to and fills up the vallecula and the lingual surface of the epiglottis. Then it is tilted over and trickled down on the laryngeal surface of the epiglottis. All of these various regions are thus outlined. Because the magnification that the roentgenogram itself provides has been worked out, we can tell quite accurately how far the lesion extends. We can tell whether it goes into the ventricle; we can tell whether a lesion that is occluding the opening of the pyriform sinus descends to the apex of the sinus. The laryngoscope can't be made to tell us that. We wouldn't want to force the instrument through what may be a large, fungating tumor and spread it in this manner.

I think the roentgens have added a great deal to conservation surgery of the larynx. For instance on inspiration the pyriform sinuses can be nicely outlined with a laryngogram. If a lesion were located there, perhaps even submucosally, and if laryngoscopy told us nothing, a laryngogram could bring it out as a filling defect. We do these x-rays before we do laryngoscopies or biopsies, for if they were to be done afterward, the tremendous edema that the larynx presents after biopsy would markedly distort the roentgens and would interfere with their interpretation. If a man has a metastatic node in his neck and the primary cannot be found, frequently the ventricle is the incriminating area and can be seen on a laryngogram.

Dr. Ziffren: I see that we have a radiotherapist here. Would you like to say something, Dr. Newman?

Dr. E. Newman, Radiology: From what we can see in the protocol, the patient had a true-cord lesion. The treatment of choice for a true-cord lesion is radiation therapy, as was mentioned earlier. Approximately 85 to 90 per cent of patients so treated are alive five years later, without tumor.

This particular patient was treated well. A small field was used. The treatment was protracted over a seven-week period, and as far as I can see, it was carried out as well as it could be. Yes, radiation changes were seen on the pathology specimen, but they are nothing to be ashamed of. Whenever any area is treated with radiation, there are certain permanent changes. These are accepted, for there is no way to direct the x-rays to hit just the tumor and miss the adjacent normal tissue. Under usual circumstances, the patient can get along well despite the radiation changes in normal tissue. As was said before, vessels may receive even higher doses than were given here, and the patients don't seem to get into trouble.

The treatment of lesions which have gone beyond the true cord is, as far as I'm concerned, a ticklish problem. I don't think it is a problem that has been settled as yet. Each individual case must be carefully weighed. With good radiation therapy, a good job can be done in treating more extensive laryngeal lesions. If there is a recurrence of the lesion after radiation therapy, surgery can always be resorted to. This particular patient was 35 years old. He was a physician. If his larynx had been removed, he would have been left with esophageal speech, and even at best, that leaves something to be desired. Through radiotherapy on even the more advanced lesions, these patients are given a chance to keep their own larynxes. If surgery is necessary later on, it usually is not too much of a problem.

Are there any questions about the radiotherapeutic aspects of this case?

Dr. Eugene F. Van Epps, Radiology: What was the tumor dose? Was it calculated?

Dr. Newman: A depth dose wasn't calculated, but the patient received approximately 3,900 r to each of two opposing fields. At that time we were using conventional radiotherapy, and the dose I mentioned is about the usual one for such lesions. Now, we frequently use cobalt therapy, and occasionally give a little higher dose.

Student: Do you find that irradiation therapy often masks the recurrence that is displayed at surgery?

Dr. Newman: That is a problem which perhaps you could say arose in this case. The edema secondary to radiation therapy, or perhaps secondary to tumor, may have masked this recurrence. However, with proper radiation therapy—using cobalt, small fields, and adequate protraction and fractionation—some of these post-radiation changes that make visualization of a recurrence difficult can be minimized. After a patient has gone through a course of radiation, his larynx usually looks pretty good. If he comes back in three or six months and if there has been a change, a biopsy should be obtained and everything possible should be done to make a positive diagnosis. If there is a recurrence, a laryngectomy should be done at that time. Yes, there is a higher morbidity following radiation, but it is still an acceptable morbidity, I think, and the patient has been given a chance to keep his larynx and a chance to get along without a tracheostomy tube.

Dr. Shumrick: I disagree with Dr. Newman when he says that a laryngectomy can always be carried out later. The Armed Forces Institute studied a series of 600 laryngeal cases collected from several institutions, and apparently it provided a good broad-scale view of this problem. The survival rate was calculated on what were called "salvage cases," cases which have been treated with laryngectomy without success, cases which have been treated with a combination of larygec-

tomy and radiotherapy without success, and those which have been treated by radiotherapy alone without success. Stromal recurrences, amounting to about 15 per cent of the total, were included. From an overall salvage rate of 78 per cent for a five-year period, the five-year salvage rate for the "salvage cases" dropped to 40 per cent. So I don't quite buy the idea that "we can always go to laryngectomies."

One runs into several problems. These people go home, and they don't return for follow-up regularly. For a mobile true-cord lesion, I think x-ray therapy is the treatment of choice. When the malignancy is beyond the true cord, however, the metastatic potential to the cervical neck increases markedly. In a patient with a true-cord lesion who has a recurrence, you can always do a hemilaryngectomy. You again save his larynx, and you run an excellent chance of a five-year cure, but if the lesion isn't on the true cord and you fail with x-ray therapy, you may well have a problem. You've cut the patient's chances of a five-year survival from roughly 78 per cent to 40 per cent. The fact that this patient was a physician had some importance, but I think he'd have preferred to live, even with esophageal speech and a tracheal stoma.

Dr. Henry E. Hamilton, Internal Medicine: Dr. Shumrick, do you have any idea how much of a disability a physician incurs if he loses the ability to speak? Can he carry on a practice?

A member of your department put a doctor in our department on complete voice rest for several months. The physician carried on his usual practice.

Dr. Shumrick: I've never known a physician so handicapped, but I've known two dentists with this problem who went right back to the practice of dentistry and got along fine. Self-ratings of esophageal speech range from "I can't do it at all" to "People don't know I've had a laryngectomy." We have an 18-year-old boy who had a total laryngectomy when he was 16. He is married, he has a family, he works, and he has the best esophageal speech I've ever heard. That lad is stimulated. He is motivated. He has his whole life in front of him, and he's not going to sit quietly in the background. He has an excellent job, and we ask him to speak to others of our patients who are apprehensive. They may never achieve his degree of success, but at least they say, "That isn't bad, is it!"

That young man was told by his family physician—a new one—that he should have his hoarseness checked. He had come to the doctor's office wearing a collar and tie, of course, and just from hearing him speak the doctor had failed to realize that he had anything wrong with him. Esophageal speech can be learned. Granted, it is not so good as normal speech, and there are little problems that cause additional difficulties—tracheal stomas, foreign bodies, crusting and esthetic aspects. But the patients can make remarkable adjustments. They form clubs called "The Lost Cord Club" or "The New Voice Club," and they stimulate one another. They show each other little tricks that are helpful. I can't see why a physician couldn't resume practicing.

Dr. Hamilton: By listening to his patients, such a man might become a better physician.

SUMMARY OF NECROPSY FINDINGS

1. Epidermoid carcinoma of larynx, post-irradiation
2. Tracheostomy
3. Erosion of innominate artery by tracheostomy tube
4. Massive hemorrhage from ruptured innominate artery, with aspiration of blood.

STUDENTS' DIAGNOSES

Massive intratracheal hemorrhage due to irradiation changes, infection and poorly-fitting tracheostomy tube

Probable recurrence of carcinoma of larynx.

DR. SHUMRICK'S DIAGNOSES

Erosion of innominate artery or thyreoidea ima artery by tracheostomy tube, with resulting tracheal obstruction by bolus of blood.

World Medical Association

LONDON, SEPTEMBER 19-25

The largest contingent of U. S. Committee observers in World Medical Association history is expected to attend the 19th World Medical Assembly, in London next fall. On Monday, September 20, Her Royal Highness, Princess Margaret will officiate at the opening ceremonial session. Daily plenary sessions are scheduled throughout the week, at which delegations of physicians representing 60 countries will consider a number of resolutions on current topics and problems. All meetings will be held in the Great Hall of the British Medical Association, in Tavistock Square.

The theme of the scientific program is "Communicable Diseases and Modern Travel." Under the chairmanship of Professor A. W. Woodruff, a panel of leading British medical authorities will examine aspects of the many health problems created by rapid travel in today's jet age. The WMA annual banquet, a ladies' program and an evening of home hospitality will round out the assembly events.

For additional information on hotel accommodations, travel, medical visits, sightseeing and registration forms, write to the U. S. Committee, Inc., World Medical Association, 10 Columbus Circle, New York City 10019.

Editorials

IS YOUR COUNTY MISSING AN OPPORTUNITY?

The January issue of MEDICAL ANNALS OF THE DISTRICT OF COLUMBIA contains a brief article telling of a very successful public meeting where the subject for discussion was "Do You Want to Be a Doctor?" The program was conducted by a panel composed of physicians, a high school counselor, a pre-medical advisor from Georgetown University, the chairman of admissions at George Washington University, and the deans of the three medical schools in the city.

The meeting attracted an audience of over 600 young people, parents and school advisors. The topics included the recommended curricula in high school and college, the academic requirements for admission to medical school, and information concerning medical-aptitude testing. Others of the subjects discussed were the individual applicant's chances of getting into a medical school and essentials for a student's survival after admission. The length of training, the costs, the available scholarships and loans, etc. were covered thoroughly.

MEDICAL ANNALS conceded that the ultimate success of the program can't be measured until several years have passed, but declared that the enthusiasm of the audience, the numerous questions and the fine presentations of the panelists made the occasion a memorable one.

It would appear that a similar program might be presented in every community of reasonable size in this state under the auspices of the county medical society. The medical profession needs able young people, and a serious effort should be made to attract them.

With the cooperation of the local nursing organization and hospital administrations, a similar program on the subject "Do You Want to Be a Nurse?" would be a proper undertaking for each county medical society. A serious attempt should be made to present nursing as an attractive field for service to humanity.

If for any reason an entire program devoted to either medicine or nursing seems too much to attempt, physicians should at least be active participants in "Career Day," which is already an annual event in the public schools of most communities.

TEN COMMANDMENTS FOR THE PROFESSIONAL MAN

Several years ago, Edward J. Devitt, chief judge of the United States District Court for the District of Minnesota, wrote an article entitled "Ten Commandments for the New Judge,"* which was enthusiastically received by the legal profession. With few and slight modifications, the young physician—and indeed all physicians—might take them to heart. They are listed below, with excerpts from the Judge's text:

1. *Be kind.* If a judge could possess but one attribute, it should be a kind and understanding heart. The Bench is no place for a cruel or callous man, regardless of his other qualifications.

2. *Be patient.* Patience is one of the cardinal virtues. A patient and kindly man will make a far better judge than an ill-tempered genius.

3. *Be dignified.* This does not mean putting on airs, but rather having an appreciation of the prestige of the judicial office, and the respect accorded it and its occupant by the American public.

4. *Don't take yourself TOO seriously.* The greatest deterrent to taking yourself too seriously is a wise and observing wife who will remark periodically, "Don't get so Judgey!"

5. *Remember that a lazy judge is a poor one.* The road to success on the bench is the same as in any other field of human endeavor. It must be characterized by hard work.

6. *Don't be dismayed when reversed.* Don't keep track of reversals. The judge who charts a batting average as to his percentage in the court of appeals is likely to become a hesitant and timid judge in the future.

7. *Remember that there are no unimportant cases.* This is another way of saying you must give the same conscientious attention to every matter that comes before you. We may think that cases can be classed as important and unimportant, but the litigants don't feel that way. Their cases are very important to them, and they must be to us.

8. *Don't impose long sentences.* A short sentence will most likely accomplish the same objective as a long one. Don't seek or encourage a reputation as a "tough" judge or as an "easy" one.

9. *Don't forget your common sense.* You might be able to get by as a judge without knowing much law, but you just can't make it without common sense.

10. *Pray for divine guidance.* If you believe in a Supreme Being, you should pray to Him for guidance. Judges need that help more than anybody else.

---

* Devitt, E. J.: Ten commandments for judge. J. AM. BAR ASSN., December, 1961.

MORTALITY IN FRACTURES OF THE HIP

A study by Lorhan and Shelby, of Harbor General Hospital, Torrance, California, and the University of California Medical Center, Los Angeles, on the subject of factors influencing mortality in fractures of the hip deserves the consideration of all physicians who are concerned with the care of patients with broken hips.* They point out that there has been considerable difference of opinion in the literature concerning the choice of anesthesia in such cases. At some centers a general anesthetic is preferred, but in others a spinal anesthetic is more commonly employed. Furthermore, there is considerable disagreement about technics of fixation. These vary from simple pinning to open reduction to nailing under direct vision, to replacing the head of the femur with a prosthesis. Though the mortality from hip fractures has varied greatly throughout the country, the authors say that the over-all death rate has been between 20 and 25 per cent.

There is no unanimity of opinion among orthopedists concerning the optimal time to operate upon patients with fractured hips. Many feel that immediate operation is advisable, and that there are few medical contraindications to this plan. Others believe that the operation should be deferred until the patient's condition has stabilized and he is prepared for the stress of the operative procedure.

In an endeavor to determine the factors that influence mortality in fractures of the hip, the authors studied the records for a 6½-year period, January, 1956-June, 1962, on all patients at Harbor General Hospital who underwent operations for the placement of a nail or a prosthesis. A total of 551 patients were operated upon for the fixation of fractured hips during that length of time—145 males and 406 females. The higher incidence among females can probably be attributed to senile osteoporosis due to a deficiency of gonadal hormones, which is much more common in females than in males. Of the 551 patients, 409 were over 70 years of age. There were 23 under the age of 50 years, but in most of those the fractures had resulted from automobile accidents. A rather surprising finding was that despite the fact that 11 per cent of the hospital patients in 1962 were Negroes, only five of the hip-fracture patients belonged to that race.

Preoperative medication in the majority of patients consisted of meperidine in a dosage of 10 to 50 mg., and pentobarbital in a dosage of 30 to 60 mg. Patients who received inhalation anesthesia were given 0.3 to 0.4 mg. of atropine sulphate 45 minutes before the induction of anesthesia.

Spinal anesthesia was used in 341 of the 551 patients; thiopental sodium and inhalation anesthesia, usually nitrous oxide, was administered to 168 of the group; epidermal anesthesia was given to 20 patients; spinal and thiopental sodium and nitrous oxide were administered to 3; and in 19 patients local anesthesia was employed.

Among the 551 patients operated upon, there were 133 deaths, for an over-all mortality of 24 per cent. Of the 133 postoperative deaths, 124 (93 per cent) occurred in patients over 70 years of age. Of the 341 patients who were given spinal anesthesia, there were 86 who died, for a mortality of 25 per cent. In the group of 168 who were given inhalation anesthesia, there were 28 deaths, for a mortality of 16.6 per cent. Local anesthesia was employed in 19 patients, and 12 (63 per cent) died.

Many surgeons have considered the pinning of a hip an emergency procedure, on the premise that by immediate surgery the postoperative complications could be reduced to a minimum. Among the patients at Harbor General Hospital, 60 were operated upon within 12 hours after injury, and 25 of them died, for a mortality of 42 per cent. Forty of the 60 patients were given a spinal anesthetic and 19 died (47.5 per cent). Twenty-eight were given pentothal sodium, nitrous oxide-oxygen, meperidine and/or halothane, and in that group there were five deaths (18 per cent). One patient was operated under local anesthesia and succumbed postoperatively.

As regards the optimal time for operation on a patient with a fractured hip, the authors assert their belief that if the patients who were operated upon with 12 hours of injury had been better prepared preoperatively, the high mortality in that group could have been appreciably reduced. Better preparation would have included a consideration of several exceedingly important factors. Dehydration and decreased blood volume should be corrected by the administration of fluid and blood. The cardiac status of the elderly patients should be evaluated before they are subjected to the stress of an operation, and in many cases digitalization might have corrected a cardiovascular instability that contributed seriously to the mortality. They point out that in geriatric patients, the average blood volume is low, and that when the aged patient is under the stress of anesthesia and surgery, compensatory mechanisms which control homeostasis are disturbed. From their experience, the authors state that subarachnoid anesthesia may be contraindicated as the anesthetic of choice for the emergency case involving a fractured hip.

There were no deaths in the operating room in this group of patients. Twelve deaths occurred within 24 hours after surgery; 46 took place within the first postoperative week; and 87 deaths oc-

* Lorhan, P. H., and Shelby, E. A.: Factors influencing mortality in hip fractures. AM. J. SURGERY, 108:645-648, (Nov.) 1964.

Editorials continued...

curred from one week to three months postoperatively.

As one might expect in a group of elderly people, associated pathologic conditions were common. Arteriosclerosis and hypertensive heart disease were often present. Congestive heart failure was diagnosed in 59 patients, and 17 of them died postoperatively from acute myocardial failure. Twenty-five patients gave histories of recent coronary infarcts, but there was no apparent correlation between those histories and the number of postoperative deaths. A total of 22 patients died of acute myocardial infarct postoperatively, and only eight of them had had hypotensive episodes during surgery.

Pneumonia was the most common cause of death. Forty-five patients succumbed from that cause—most of them after the first week. Twenty-five of the group died as a result of acute cardiac failure, 27 from myocardial infarction, 12 from cerebral hemorrhage, 8 from septic shock, and 9 from miscellaneous causes.

There was a definite correlation between the duration of the operation and the postoperative mortality, despite all the advantages of modern technics of anesthesia and of blood and fluid replacement. According to the authors, the aged patient deteriorates after two hours of anesthesia and surgery, as a result of peripheral vascular collapse. It is postulated that stress results in adrenocortical exhaustion, in these cases. In this series of cases, the critical period began at the two-hour mark. Of the 551 operations, 352 required more than two hours, and of the 133 deaths, only 35 (26 per cent) occurred in patients for whom the operation lasted less than two hours. Significant is the fact that 95 of the 98 deaths following operations lasting more than two hours occurred in patients over 70 years of age.

The authors conclude that elderly patients with fracture of the hip should not be subjected to emergency surgical procedures and should not be operated upon within 12 hours after injury. They should be treated and prepared for the stress of surgery by electrolyte replacement, correction of blood-volume deficits, digitalization when indicated, and correction of respiratory problems if possible. The choice of anesthesia must be weighed carefully and individualized. One must take into consideration the over-all condition of the patient. The anesthetic must be the one which will cause the least physiologic imbalance. It is important that there be no impairment of circulation, and that a free airway be maintained. They emphasize that the administration of oxygen is mandatory in all patients given a spinal anesthetic. In the postoperative period, early ambulation is highly important, and a minimum of sedation should be employed.

A PREVENTIVE FOR THE TOXIC EFFECTS OF CHLORAMPHENICOL

The antibiotic chloramphenicol has proved an extremely efficacious drug in the treatment of a variety of acute infections, but its toxic effect upon the bone marrow has seriously restricted its use. Bone-marrow arrest and the development of aplastic anemia are formidable complications, and the careful clinician confines the administration of chloramphenicol to those patients with critical infections in which the causative organism is sensitive to this antibiotic but to no other therapeutic agent.

A recent report by Ingall and colleagues, from the Boston University College of Medicine, raises hope for a prophylaxis against the toxic effects of chloramphenicol through the simultaneous administration of the amino acid phenylalanine.* The Boston group point out that several investigators have demonstrated vacuoles in both the erythroid and myeloid precursors in the bone marrow as an early manifestation of chloramphenicol toxicity. The relation between these early, reversible lesions and the later and more serious lesions of the bone marrow, however, is not known.

Similar vacuoles in the cytoplasm of erythroid precursors have been reported in acute alcholism and in erythremic myelosis, as described by Di-Guglielmo. It has also been observed in normal infants and in those with phenylketonuria who were receiving a phenylalanine-deficient diet. In infants on the deficient diet, the addition of phenylalanine to their feedings resulted in a reversal of the lesions—i.e., a clearing of the cytoplasmic vacuoles. It was this reversal of the lesions which prompted the Boston group to attempt a study of the effect of phenylalanine administration upon vacuolization of the erythrocyte precursors in the marrows of patients receiving chloramphenicol. In addition, they hoped to demonstrate a possible correlation between the amino acid concentration in the blood and amino acid excretion in the urine with the changes in the bone marrow.

Ingall and his colleagues made their study on eight children with a variety of infections, including shigellosis with diarrhea, E. coli enteritis, E. coli septicemia, H. influenza meningitis and osteomyelitis. The ages of the patients varied from newborn to eight years, and their weights varied from less than 4 lbs. to over 45 lbs. Chloramphenicol was administered in doses of 100 mg./Kg. of body weight per day.

Phenylalanine, 100 mg./Kg./day was added to the diets of three of the acutely ill children—for six days in a nine-month-old boy with H. influenza meningitis; for two days in a three-day-old infant

---

* Ingall, D., Sherman, J. D., Cockburn, F., and Klein, R.: Amelioration by ingestion of phenylalanine of toxic effects of chloramphenicol on bone marrow. NEW ENGLAND J. MED., **272**:180-185, (Jan. 28) 1965.

with E. coli septicemia; and for three days in a four-year-old with salmonella osteomyelitis and sickle-cell anemia. The other babies and children were given diets appropriate for their ages, with no phenylalanine supplementation.

Bone-marrow specimens were obtained before the start of chloramphenicol therapy, after two or three days, and after six to nine days of treatment, and then every two or three days thereafter. At the time of bone-marrow aspiration, blood was procured for measurement of serum amino acid concentrations.

In the study, it was found that vacuoles developed in the erythroid cell and myeloid cell cytoplasm in the bone marrows of five of the eight children who were being treated with short courses of chloramphenicol.

After L-phenylalanine had been administered for 48 to 96 hours to two patients, the vacuoles disappeared from the bone-marrow cells. In a third patient who had been given phenylalanine for 72 hours, vacuoles were still present in bone-marrow cells, but the number of cells involved had markedly decreased, and the size and number of vacuoles had greatly diminished. These changes were observed even though the children continued to receive chloramphenicol in the usual doses.

Of interest was the fact that the concentration of chloramphenicol in the serum varied considerably from patient to patient, and from time to time in the same patient, despite a uniform dosage.

The serum amino acid concentrations increased when chloramphenicol was being given, and the increase was greatest in the youngest infants. When the bone-marrow changes improved after phenylalanine had been added to the diet, the level of amino acids in the serum decreased or remained the same, but the concentration of alanine increased significantly. During the time that chloramphenicol was being administered, there was a rapid increase in the urinary excretion of amino acids, and it reached a level that paralleled the serum or plasma levels. In one patient after the bone-marrow lesion was found, there was no change in the pattern of either total or individual amino acid excretion.

According to the authors, it is reasonable to assume that the vacuoles seen in the erythroid precursors were truly a toxic manifestation of chloramphenicol. In their judgment, the vacuoles observed in the cytoplasm of the myeloid precursors are also the result of chloramphenicol toxicity. The changes in the concentration of circulating free amino acids suggests a block in the utilization of those substances, but those changes couldn't be correlated with the bone-marrow disturbances. The fact that there was an increased excretion of amino acids indicates that there was no disturbance of renal function caused by chloramphenicol. The precise manner in which chloramphenicol produces the bone-marrow lesions is unknown, though it is possible that it may be due to a disturbance of phenylalanine metabolism.

The authors assert that the evidence in their study indicates that supplemental ingestion of phenylalanine reverses the vacuolization of erythrocyte precursors in the bone marrow. The efficacy of phenylalanine in more advanced bone-marrow disturbances produced by chloramphenicol will require further study. In their small series of cases, the doses of phenylalanine were small and the duration of therapy was short, but the effects were considered dramatic in the three patients treated.

Ingall *et al.* have concluded, "If the antagonism of phenylalanine to the toxic effect of chloramphenicol on the bone marrow is not accompanied by an equal antagonistic effect to the antibacterial activity of chloramphenicol, administration of the amino acid prophylactically should be considered whenever chloramphenicol is given." They further suggest that a trial of phenylalanine, either with or without testosterone, should be attempted in patients at various stages of bone-marrow hypoplasia from chloramphenicol, even after fully developed hypoplasia has occurred. They make this recommendation even though there is no evidence at the present time that erythroid vacuoles presage more serious toxic effects of chloramphenicol.

Although the prophylactic and therapeutic use of phenylalanine in conjunction with chloramphenicol therapy may not prove completely successful, it is encouraging to the practicing physician to know that conscientious endeavors are being made to investigate the metabolic disturbances responsible for bone-marrow arrest in certain patients receiving this antibiotic.

DRUGS AND THE PREGNANT PATIENT

In a recent paper on the subject of obstetric and gynecologic drugs, Robert W. Kistner, assistant professor of obstetrics and gynecology at the Harvard Medical School,* has asserted:

"Every practitioner concerned with the care of the pregnant female should carefully record the names of all the drugs given, the dosage, and the duration of therapy. Finally, there must be education of the medical profession toward medical abstinence. The practitioner should attempt to convince his patient that life itself is not a 'drug-deficient disease' which may be improved or enhanced by the ingestion of a variety of pills."

He urges that the misnomer "placental barrier" be discarded, saying it has been demonstrated that the atmosphere in a crowded bus with the windows closed may alter the CO_2 and bicarbonate concentrations of venous blood of a pregnant pas-

* Kistner, R. W.: Hazards of obstetrical and gynecological drugs. OHIO STATE MED. J., **60**:1125-1129, (Dec.) 1964.

Editorials continued...

senger and cause a similar change in the blood of the fetus. There are many environmental factors that must be considered potential hazards to the developing fetus.

Kistner points out that except possibly in the patient who has been treated for infertility, most pregnancies still happen by chance, and the majority of patients don't present themselves for prenatal care until after the third month of gestation. Thus, during the most critical period of intrauterine life, the physician has had little control over environmental conditions or the patient's use of potentially harmful drugs.

From the unfortunate experience with Thalidomide, it is obvious that many of the newer drugs should be re-studied in pregnant animals—preferably in primates. Even this evidence cannot give complete assurance of safety for a specific substance, since the patient may have an intrinsic enzyme abnormality that could convert a given drug from a safe to an unsafe one.

He urges that during pregnancy it is important to administer drugs for specific indications only, and it is advisable to withhold any drug that is known to be teratogenic in animals, unless the life of the mother is endangered. The physician must select a preparation which has been proved safe by animal experimentation and, in addition, by prolonged clinical investigation and widespread use. It is his obligation to be certain that a drug given to a pregnant woman shall be no more dangerous to her or to the fetus than is the condition for which the drug is given.

Rather than therapeutic nihilism, Dr. Kistner's advice constitutes therapeutic caution. The words of Polonius were never more appropriate to a medical situation:

"Do not dull the palm with entertainment
Of each new-hatch'd, unfledged comrade."

THE COMPLETE AND THOROUGH PHYSICAL EXAMINATION

In a recent letter to the editor, a business executive expressed his dismay and disappointment over an annual physical appraisal that his family physician had given him. The businessman had requested "a complete and thorough physical examination," and though he is a layman he recognized that the examination was *not* complete, and did not even include a digital rectal examination. The purpose of his letter was to emphasize that incomplete and shabby physical appraisals can give the patient a false sense of security and jeopardize the public's confidence in the entire program of preventive medicine.

Today the average layman is too well informed not to recognize indifference upon the part of the physician or incompleteness in the appraisal of his or her physical condition. The public has been thoroughly indoctrinated by all communications media regarding the importance of early detection of cancer and of heart disease. Women know that the doctor who fails to take a Pap smear is remiss in his duty, and men know that a rectal examination is as much a part of the physical appraisal as the taking of the blood pressure. There are just no short cuts in a thorough determination of the health of the patient. The patient expects and is entitled to a careful history-taking, a thorough physical examination and an unhurried discussion of his health problems.

The necessity for various laboratory tests and for certain special examinations is determined by the age and sex of the individual and by his history. The indications for these are determined by the examining physician. The conscientious doctor is careful to restrict laboratory tests and special examinations to those that are necessary, and he does not depend upon a whole battery of tests as a substitute for diagnostic acumen and a thorough examination. In most offices, a complete blood count and a urinalysis are routine at the time of the annual health appraisal, and in new patients serology is standard practice. In adults, a chest x-ray is usually taken every other year, but in smokers it is the usual practice to obtain a chest film annually. Pap smears are usually done routinely in all married women and in single women over 20 years of age. Proctoscopic examinations are performed routinely in some offices on all persons over 40 years of age, and one is done without fail if the history has aroused any suspicion of difficulty. Electrocardiographic tracings have become almost routine in adult health examinations, but they are no substitute for a careful examination of the heart and of the response of the heart to exercise. X-ray studies of the gastrointestinal tract or the gallbladder, and intravenous pyelograms, are not routine procedures, but are done whenever indicated by the history or the physical findings. Blood chemistry studies and PBI determinations are also performed as indicated.

The health appraisal is incomplete without an unhurried discussion of the findings with the patient. This should include directions concerning the management of any specific problem, and a consideration of weight and diet, habits of smoking and drinking, of work and of play, of sleep and of exercise. It is at this time that the patient has an opportunity to tell of his hopes and fears, and of his interpersonal conflicts and problems. It is at this time that the physician has an opportunity to uncover the patient's emotional problems and to give him his support in resolving his difficulties. Such a conference is richly rewarding both to the patient and to the physician.

Letter to the Editor

Sir:

AMA Resolution No. 50 on Vexatious Litigation, introduced by the Iowa Medical Society at Atlantic City in 1963, is being censored by our attorneys—the ones we pay to help us. At the recent clinical session of the AMA in Miami, I asked the chairman of the Texas delegation whether I could discuss Resolution No. 50 with his group. His answer was, "No, our attorney says you cannot speak to our group, nor will he see you." THE AMA NEWS and the state medical journals of Texas, California and New York refused to give any space to a discussion of Resolution No. 50.

Nevertheless, the adoption of this Resolution would be beneficial to every physician. No physician has any assurance—no matter how careful or conscientious he may be in his practice—that tomorrow he may not get a letter threatening him with a malpractice suit for anywhere up to $400,000!

Concerning Resolution No. 50 there is clearly a conflict of interest. We cannot expect our attorneys to serve the best interests both of the medical and of the legal profession. We get the short end of it. Anything of a legal nature presented to the AMA is referred to a liaison committee of physicians and lawyers, and the lawyers on that committee naturally represent the views of the legal profession. They are there to protect the best interests of the association of professional claimants, whose stock in trade is litigation.

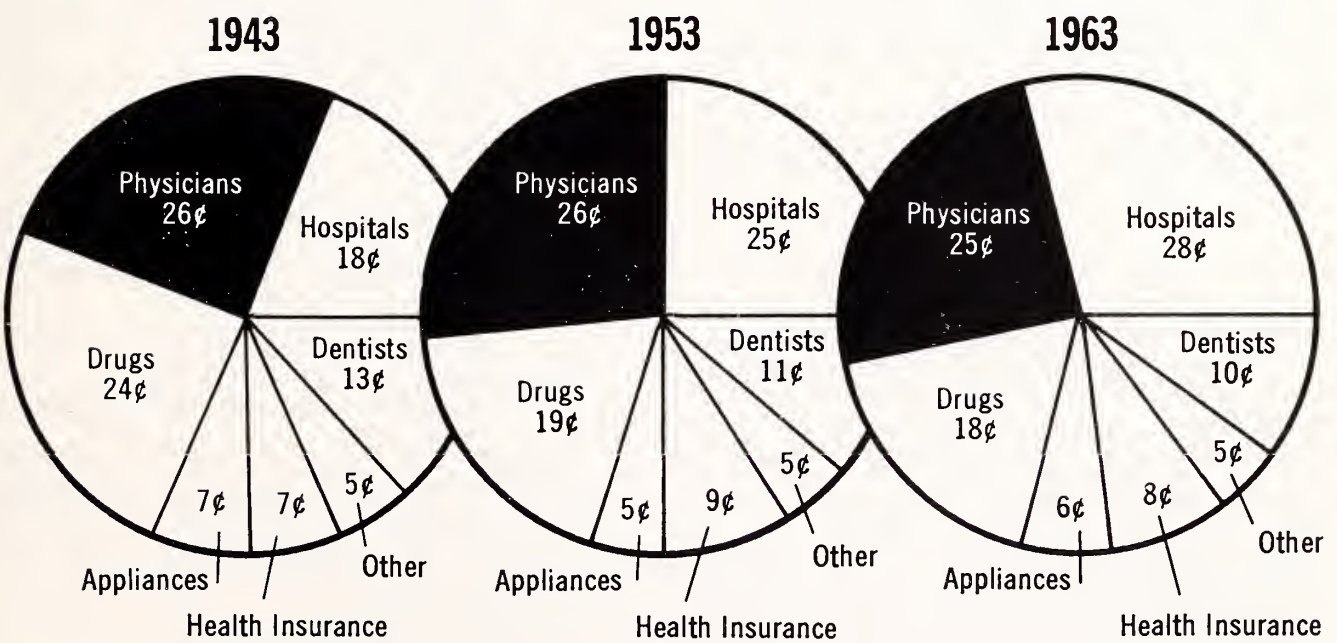
If you were to have your house appraised, in an effort to determine its fair market value, would you want to have the prospective purchaser as one of the appraisers? We have the same problem with these liaison committees. We ask the lawyers to consider something that we really know beforehand they are interested in defeating. And the attorneys are succeeding in doing just that, for the medical-legal liaison committee of the AMA has given an adverse report concerning Resolution No. 50. The physicians on that medical-legal committee heard only one side of the question—the side presented by representatives of the legal profession. To my knowledge, no one representing the interests of the medical profession was asked to give his views.

The physicians on such liaison committees can no more expect to get an unbiased opinion from the lawyers concerning Resolution No. 50 than we can expect to get a fair evaluation of private enterprise from Peking!

PETER VAN ZANTE, M.D.

Pella, Iowa
March 7, 1965

DISTRIBUTION OF THE "HEALTH CARE DOLLAR"
For Years 1943, 1953, and 1963



SOURCE: U. S. Dept. of Commerce
AMA News Graphichart

The 1965 Annual Meeting of the AMA

BY DONOVAN F. WARD, M.D., PRESIDENT

The year 1965 is a crucial year for American medicine. It is a year in which important and far-reaching events are transpiring that may have a long-lasting impact on how we practice medicine in America.

An outstanding highlight in medicine in 1965 will be the 114th annual convention of the American Medical Association June 20-24 in New York City. It is our conservative estimate that more than 10 per cent of all American physicians, and perhaps as many as 15 per cent of those in private practice, will register for the New York convention.

Nowhere else in the entire world do physicians gather in such numbers to continue their medical education in an intensive short course that, literally, has something for everyone. Hundreds of scientific papers will be presented by the top medical scientists of our time, from foreign lands as well as our own country. Newest teaching films will be shown. Hundreds of scientists will offer exhibits in which the entire spectrum of medical progress in 1965 will be on view.

American physicians do not attend the AMA annual convention just to take a trip to New York, although that is an interesting sidelight. They attend because they have learned through the years that nowhere else can they find out so much about new developments in medical practice; where they can learn so many things that will be of inestimable value to them in their own practices.

The Council on Postgraduate Programs of the AMA has done an outstanding job in preparing the scientific programs for the 114th annual convention. This is the single most important medical scientific meeting in the world this year.

On behalf of your professional society, the American Medical Association, I urge personally that every physician in America attend the June convention.

Iowa Thoracic Society

"The Clinical Significance of the Newer Respiratory Disease Viruses" and "The Task Ahead in the Control of Tuberculosis" are papers to be presented by Lewis B. Lefkowitz, Jr., M.D., University of Illinois, College of Medicine, and Gordon M. Meade, director of medical education, American Thoracic Society, New York City, respectively, at Hotel Savery, on April 7, between 7:30 and 9:00 p.m., during the annual meeting and medical program of the Iowa Thoracic Society.

William M. Spear, M.D., Oakdale, president of the Iowa Thoracic Society, invites all Iowa physicians to attend the hospitality hour, dinner and medical program of the organization's sixteenth annual meeting.

The business meeting, and election of officers and executive committee members, will be held from 4 to 5:30 p.m. The hospitality hour will follow the business meeting, and a smorgasbord dinner will be served at 6:30. Spouses are invited.

Diseases of the Colon and Rectum

The Department of Surgery at the U. of I. College of Medicine will present a postgraduate course on Diseases of the Colon and Rectum on May 4 (evening) and May 5, in Iowa City. The $15.00 registration fee includes the cost of a lunch ticket. The program has been approved for 8½ hours of credit by the American Academy of General Practice.

Tuesday Evening, May 4

6:00 p.m. Social Hour and Dinner—University Athletic Club
"Reflections on Surgery: Past, Present and Future"—Warren H. Cole, M.D., head of surgery, University of Illinois College of Medicine

Wednesday, May 5

Medical Ampitheater, Room E-331

7:30 a.m. Operative clinics via television to Medical Ampitheater
Comments by Dr. Cole and U. of I. surgery staff

10:15 a.m. FUNDAMENTAL CONSIDERATIONS IN SURGERY OF THE COLON AND RECTUM: A SYMPOSIUM
Applied Anatomy, E. W. Scheldrup, M.D.
Practical Physiology, E. E. Mason, M.D.
Surgical Pathology, J. M. Layton, M.D.
Microbiology and Antibacterial Aspects, I. M. Smith, M.D.
Technical Factors in Operative Management, J. A. Gius, M.D.

12:30 p.m. LUNCHEON

1:30 p.m. "Recent Studies on the Dissemination of Cancer"—Dr. Cole

2:30 p.m. Short motion pictures with commentary by the author, including:
Construction of Colostomy and Ileostomy
Operation for Hemorrhoids
Treatment of Polyps
Biopsy for Hirschsprung's Disease
Conservative Treatment of Volvulus

3:45 p.m. CONTROVERSIAL AND UNSETTLED PROBLEMS: A SYMPOSIUM
Diverticulitis, Ulcerative Colitis, Polyps including Villous Adenoma, Prolapse, Volvulus, Hirschsprung's Disease, Wounds of the Colon, Recurrent Cancer, Etc.
R. T. Tidrick, M.D., Moderator
E. S. Brintnall, M.D.
W. H. Cole, M.D.
R. D. Liechty, M.D.
R. T. Soper, M.D.
S. E. Ziffren, M.D.

5:00 p.m. Adjournment

Coming Meetings

IN STATE

Apr. 8-9 **Pediatric Conference,** Raymond Blank Memorial Hospital Assn., School of Nursing Auditorium, Iowa Methodist Hospital, Des Moines.

Apr. 11-14 **Iowa Medical Society Annual Meeting,** Hotels Fort Des Moines and Savery, Des Moines.

Apr. 22 **Role of Diet in the Management of Ischemic Heart Disease, U. of I. Department of Internal Medicine and Nutrition,** YMCA Building, Des Moines.

Apr. 23-24 **Trauma of the Head and Neck,** U. of I. College of Medicine, Iowa City.

May 4-5 **Diseases of the Colon and Rectum,** U. of I. College of Medicine, Iowa City.

May 14-15 **Fifth Institute on Preventive Psychiatry,** U. of I. College of Medicine, Iowa City.

May 21-23 **Tri-State Meeting of the Illinois, Iowa and Wisconsin Associations of Blood Banks,** Clayton House Motel, Davenport.

CONTINENTAL U. S.

Apr. 2-4 **21st Annual Meeting, American Society for the Study of Sterility,** Jack Tar Hotel, San Francisco.

Apr. 3 **Seminar in Diseases of the Nervous System,** Clinical and Pathological Considerations, Missouri Society of Pathologists, St. Louis.

Apr. 3-4 **International College of Surgeons Pennsylvania Division Meeting,** Hershey, Pa.

Apr. 4-8 **American College of Obstetricians and Gynecologists 13th Annual Clinical Meeting,** Civic Auditorium, San Francisco.

Apr. 5-6 **Pediatrics,** University of Nebraska College of Medicine, Omaha.

Apr. 5-7 **Ophthalmology,** University of Kansas Medical Center, Battenfeld Auditorium, Kansas City, Kan.

Apr. 5-8 **American Industrial Health Conference,** Americana Hotel, Bal Harbour, Fla.

Apr. 5-8 **38th Annual Spring Congress in Ophthalmology,** Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va.

Apr. 5-9 **Nuclear Medicine for the Internist, American College of Physicians,** Johns Hopkins Hospital, Baltimore.

Apr. 7-10 **American Association for Cancer Research Annual Meeting,** Bellevue Stratford Hotel, Philadelphia.

Apr. 8-9 **National Council on Alcoholism Annual Meeting and Institutes,** Mayo Hotel, Tulsa, Okla.

Apr. 12-16 **17th Annual Scientific Assembly of the American Academy of General Practice,** Civic Auditorium, San Francisco.

Apr. 15-17 **Clinical Dermatology,** University of Colorado School of Medicine, Denver.

Apr. 22-23 **Spring Program, Hospitals of Greater Kansas City,** Kansas City Southwest Clinical Society, Kansas City, Mo.

Apr. 22-24 **Clinical Gastroenterology Symposium,** Mound Park Hospital Foundation, St. Petersburg, Fla.

Apr. 25-29 **International College of Surgeons North American Federation Congress,** Las Vegas, Nev.

Apr. 26-27 **AMA's Second Congress on Environmental Health Problems,** Drake Hotel, Chicago.

Apr. 26-29 **Mechanisms and Therapy of Cardiac Arrhythmias,** Hahnemann Medical College and Hospital, Sheraton Hotel, Philadelphia.

Apr. 26-29 **Aerospace Medical Association,** New York Hilton, New York City.

Apr. 26-30 **Cardiopulmonary Diseases, American College of Physicians,** University of Colorado Medical Center, Denver.

Apr. 26-May 1 **American Board of Obstetrics and Gynecology,** Part II Examination, Edgewater Beach Hotel, Chicago.

Apr. 28-May 1 **Ninth Postgraduate Course in Trauma,** Chicago Committee on Trauma of the American College of Surgeons, John B. Murphy Memorial Auditorium, Chicago.

May 3-4 **Conference on Arthropod-Borne Viral Encephalitis,** Kansas State Department of of Health and Missouri Division of Health, Kansas City, Mo.

May 3-4 **Otorhinolaryngology,** University of Kansas Medical Center, Battenfeld Auditorium, Kansas City, Kan.

May 3-4 **Cardiac Auscultation,** University of Kansas Medical Center. Kansas City, Kan.

May 3-4 **Surgery and Trauma,** University of Nebraska College of Medicine, Omaha.

May 3-7 **National League for Nursing Convention,** San Francisco.

May 4-6 **State Medical Society of Wisconsin Annual Meeting,** Milwaukee.

May 4-27 **Short course for directors of hospital volunteer services,** American Hospital Association, Columbia University, New York City.

May 10-14 **Rehabilitation, American College of Physicians,** New York University Medical Center, New York City.

May 11-13 **Long Island Jewish Hospital's Symposium on Vectrocardiography,** Sheraton-Tenney Inn, La Guardia Airport, Queens, N. Y.

May 14-16 **Twelfth Western Cardiac Conference,** Broadmoor Hotel, Colorado Springs.

May 15-19 **Annual Meeting, Medical Society of New Jersey,** Haddon Hall, Atlantic City.

May 24-25 **Postgraduate Course in Pediatrics,** University of Cincinnati, College of Medicine, Cincinnati.

May 30-June 3 **Annual Meeting of the Medical Library Association,** Bellevue-Stratford Hotel, Philadelphia.

ABROAD

Apr. 17-19 **American Academy of General Practice, 1965 Invitational Scientific Congress,** Honolulu, Hawaii.

April 20 **International College of Surgeons,** Munich, Germany.

May 22 **International College of Surgeons,** Khon Kaen, Thailand.

May 24-26 **Current Concepts in Gastroenterology—American College of Physicians,** Royal Victoria Hospital, Montreal, Quebec.

May 24-27 **Fifth International Thyroid Conference,** Rome, Italy.

June 16-19 **International College of Surgeons European Federation Congress,** Helsinki, Finland.

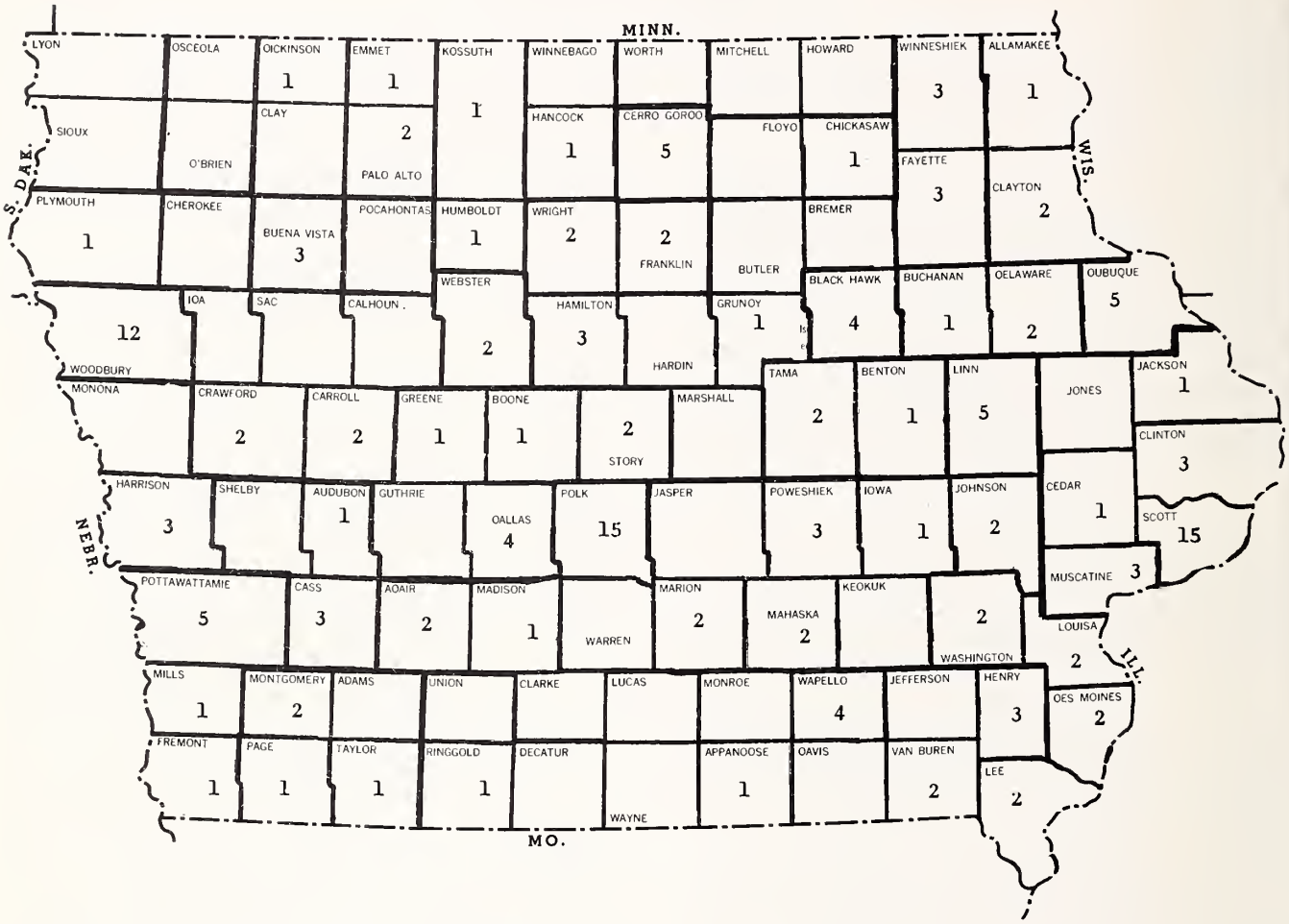
June 30-July 5 **International College of Surgeons New England and East Canadian Region Meeting,** Mont Gabriel, Quebec, Canada.

July 22-24 **International College of Surgeons Guanabara Division Meeting,** Rio de Janeiro, Brazil.

July 28-31 **Second International Congress of Psychosomatic Medicine in Obstetrics and Gynecology,** Vienna, Austria.

Aug. 8-14 **Eighth International Anatomical Congress,** Wiesbaden, Germany.

Most of These 1963 Deaths From Uterine Cancer in Iowa Could Have Been Prevented



In 1963, as the accompanying map shows, 168 Iowa women lost their lives because of uterine cancer. Ninety-seven of those deaths were caused by malignancies of the cervix uteri; 14 by malignancies of the corpus uteri; and 57 by malignancies of unspecified parts of the uterus.

A great many of those deaths could have been prevented through early detection, diagnosis and treatment.

The American Cancer Society is placing great emphasis on regular health checkups, including complete pelvic examinations and Papanicolaou tests to assist in the early detection of uterine malignancies.

Education of all adult females is vital to the success of this effort. A film titled "Time and Two Women" has been prepared by the American Cancer Society to show the lay public the life-saving advantages of regular health checkups, including Papanicolaou smears, for all women. It has been approved by the Iowa Medical Society, and has been shown to many groups throughout the state. Yet, many thousands of women have not had an opportunity to see it.

Arrangements have been made with a number of Iowa television stations to show "Time and Two Women" during the month of April, as a highlight of the presidentially-proclaimed Cancer Control Month. On some of the stations, the film will be used as part of a 30-minute presentation which will also include a physician speaker. The showings are an activity of the Iowa Division's Committee on Public Education and Information, of which Addison W. Brown, M.D., of Des Moines, is chairman.

Please use every available means to urge your patients to watch one of the following programs:

TELEVISION SHOWINGS OF "TIME AND TWO WOMEN"

Ames, WOI—channel 5	Tuesday, April 27, 3:00-3:30 p.m.
Cedar Rapids, WMT—channel 2	Tuesday, April 20, 1:00-1:30 p.m.
Davenport, WOC—channel 6	Saturday, April 24, 12:30-1:00 p.m.
Fort Dodge, KQTV—channel 21	Tuesday, April 27, 4:00-5:00 p.m.
Mason City, KGLO—channel 3	Monday, April 19, 10:30-11:15 p.m.
Ottumwa, KTVO—channel 3	Thursday, April 29, 4:00-4:25 p.m.

Check newspaper listings for additional showings in the Des Moines, Sioux City and Council Bluffs areas.

President's Page

Sir William Osler once said "Without faith a man can do nothing; with it, all things are possible." As every physician knows, this applies not only to spiritual faith but also to the faith one has in his system, in his associates and in himself.

Faith must have adequate evidence; else it would be mere superstition or imprudence. However, the experience of life always works toward the confirmation of a faith which inspires and sustains confidence that the discords of the present are the framework for harmonies of the future, for without faith, man would have no more history than does a flock of sheep.

Human relations are so complicated that it is rarely possible to determine, by any accepted standard, that a particular course of action is correct. Every problem must be thoroughly analyzed, but eventually a decision must be made. It is at this point that one must have what Robert Frost has called the courage to act on insufficient evidence—the kind of courage that must be based on nothing but faith.

The physician's daily encounter with the complex orderliness of nature constantly reminds him that such continuity has both meaning and purpose. It is spiritual faith, faith in his system and in his associates, and a humble faith in himself that compel the physician to reject those perfidious systems that would subvert man to a capricious society.

HAPPY EASTER!

Otis D Wolfe

President

Lawrence James Halpin
1909-1965

Our first meeting was inauspicious and our friendship grew slowly. It was only because we discussed the encounter at a later date when we began to see each other more often that I remember so many of the details which would ordinarily have been forgotten. Of these I recall more of his smile than I do of any other circumstance.

It was at a national convention. The room was alternately bright and dark as slide succeeded slide. While the speaker was requesting, "the next slide please" a voice deeper than it should have been for a man so slightly built asked me if the seat beside me was occupied. I looked upward and to my left and became aware of the smile. In these days of so-called objectivity it is difficult to write convincingly that a smile may be outgoing and an externalization of a humility coupled with humor and graced with good will. But so it was with the stranger who looked down on me.

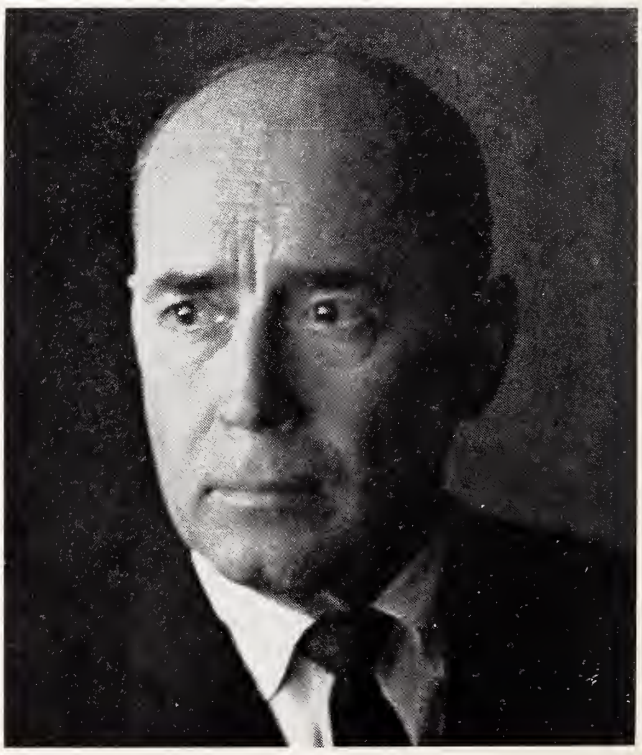
I moved the briefcase and papers which I had placed, in British fashion, on the next chair to ensure myself semiprivacy, and the stranger sat down. We sat shoulder to shoulder in the half-darkness. It was to be the first of some hundreds of similar occasions, except for those times when one of us was on the platform and the other made it a point to attend.

The speaker on the podium continued. It was clear to me that he was clothing good but uncomplex and, indeed, rather simple ideas to which he had added his little, with the sort of language young investigators feel is needful for the expression of *Science*. Patients are subjects; skin becomes epithelium; medicines are administered and abnormalities are pathological findings. In this instance, the speaker appeared to have gone out of his way to use the longest possible term where a short old-fashioned English word would have served his purpose. The only reason for mentioning some of these details is that for anyone, such as the stranger next to me, who might have entered the hall in the midst of the presentation, the speaker must have seemed singularly obtuse.

During the inevitable interlude in which the slides (of which there were too many and those too crowded) were being rearranged in proper order, the physician beside me whispered, "Smart cookie, uh?" I, as he later reminded me, answered distantly, "Not particularly. You are probably not familiar with the subject." The deep voice asked, "Are you?" When I said that I was, he continued, "I'm not. Could you explain it to me?" I was happy for any excuse to leave. Besides, my curiosity was aroused. At scientific meetings, members of the audience are not usually asked to explain the topics of the speakers. My answer was, "Why not now?"

Under a blessed cover of darkness we slid off our hard seats. On the hotel mezzanine we found an unoccupied corner couch within a sheltering hedge of writing desks. I began at the beginning and we talked without interruption until a physician who detached himself from a group which had left the now emptying lecture hall came by with a "We're meeting where we planned, Larry." There was obviously some haste, but my companion took time and with an apparent sincerity, but with what I thought were more courteous phrases than the occasion warranted, thanked me for my explanation.

I did not know then what I later learned. During all of his life he was never so busy that he could not make time to thank people for what they had done to make his way smoother or more pleasant.



Lawrence J. Halpin, M.D.

He expressed his gratitude when anyone taught him anything or told him where he could find something he wanted to learn. He lacked all pretense to knowledge he did not possess. He could not maintain the silence which passes for wisdom or learning should neither, in that case, be his.

Whenever he arrived home from a meeting or after having stayed with you at your home, his "bread and butter" letters were characteristic expressions of genuine gratitude for any favors you might have done for him. His letters, which were intensely personal, usually ended with, "We (for him and Peg) will be thinking of you. Don't you forget us." To Fran Allison he always wrote, "love and lilacs," and for others he had special phrases which set his letters to them apart from any others. Sometimes when there was no reason to write he would sit down at his typewriter anyway and send you a short and personal note. One now before me ends, "Take it easy, give our love to Helen, don't forget me and say hi to everybody."

We could, neither of us, ever remember whether our next meeting occurred during the following year or two years later. I had been invited to one of those cocktail parties that are held in a bedroom-parlor suite of a hotel. No one I knew had, as yet, appeared. My hosts were so occupied in greeting those who kept coming into the room by both doors that it was clear they had no opportunity to introduce anyone to anyone else. I waited, standing alone, cradling a drink and of a half a mind to slip away.

Larry caught sight of me through the forest of bodies between us. He was telling a story. He signalled me to wait and when he had finished, elbowed his way through the crowd toward me. He needn't have done it and I would not have been offended had he forgotten our talk on the couch of a hotel mezzanine of another city a year or two in the past.

He had in the interim learned my name. His inquiry as to how I had been was cordial and sincere. He asked me how many dull speakers I had been forced to listen to and how many people had dragged me out of a lecture hall. During the years I knew him, I saw him, again and again, do for others what he did for me. For Larry it seemed, and undoubtedly was, effortless to remember faces and names and the associated backgrounds. He always, and within a few seconds, became one of your group. He could always recall the circumstances of the friendships. When he saw anybody standing alone he introduced himself. Before you knew it you were friends. At any party he became the second host. The party took on a new spirit. No one ever minded.

His manner invited you to tell him about yourself. You were spared the searching and often embarrassing questions of the professional mixer who wants to know more of you than you are prepared to offer. It seemed as though you were the only person in the room, although you were conscious that he was somehow aware of what was going on all about. He did not give the impression of listening so intently that you were placed on your guard. He gave you the feeling (of which I was later to take advantage) that what was said would remain between you, and not be the business of anyone else. You could be certain that if he was present while you were being discussed, what might be said would not be to your disadvantage.

Larry took it absolutely for granted that you were equally interested in him and as well in all members of his family, but he never mentioned to you the activities in which he was involved but in which you were not. I do not play golf. We did not discuss it.

No matter how often he wrote to you or telephoned you or, in my case, sent a dictated disc to play on your machine, you were certain to receive the Family Letter. In someone else, the letter would have been an expression of vanity. But you looked forward to Larry's letters, to learning what Peg and the children had done and you wanted to receive the family photograph. You read the letter often several times and filed it, something you never did with similar letters especially when they became what was almost a conventional alternative to a card.

During each of the succeeding five years after our first meeting he attended conventions in uniform. He had gone into military service in 1941 and left in 1946 with the rank of Lieutenant-Colonel. He was almost always accompanied by Colonel French and I remember that, between them, they presented papers on the incidence of allergy in the Armed Forces for the treatment of which, in their Corps Area, they were responsible.

Difficult as film was to obtain there were those who during the Great Insanity of WW II took snapshots of practically everyone present at conventions. I suppose one never knew if one would ever see all the others again. Whenever I knew someone who had snapped a picture of Larry and me together I would ask for a copy. Sometimes one or two would actually send me the snapshot.

There were also in those days official photographers who took sweeping panoramic photographs of the assembled groups which, because of the press of duties and restrictions on travel and accommodations, were not as large as they are today. A man standing on a chair could easily encompass us all in one picture. The flashlight, held by the assistant, had a tendency to wash out all the wrinkles of character and to give everyone a somewhat pasty and flat look. Despite this, those photographs I have show Larry to have been a rather handsome man, sometimes serious and sometimes smiling, but always, to use an overworked phrase, radiating good will. Except for the thinning of his hair and the turning grey of what remained, he changed little with the passing of the years. He kept himself trim and for years his stomach was a flat as an ironing board. When he and I both ceased smoking, we both developed the usual rounding of the waist which he

always laughingly referred to as less for him than for me.

Because we rarely talked of the past except for a quick flash of particular reminiscence, more often by means of a key word or a privately understood phrase, I do not remember when or how I learned some of the facts of his background. He was younger than I, but only by a mere four years. In all things, except matters academic, I treated him as though he were the older. He had been able to do so much in the years that he lived that an early question of those who met him was how old he was.

At his funeral those of his friends who were a little or much older confessed to that special and too often secretly held sense of cold fear that comes to those who have lost a younger contemporary. When I confessed to what Santayana phrased as "Despair before you, Vanity behind," I was not alone.

Larry's pre-medical education consisted of attendance at Coe College, the name of which, it amused him to learn, was both the name of a small hut at the head of a mineshaft and a disease of sheep. He went on to the State University of Iowa and graduated from its medical school in 1933. His internship was spent at St. Francis Hospital in LaCrosse, Wisconsin, and his residency at the Children's Hospital of Milwaukee. If there was anything special that happened to him during these years, he never mentioned it to me. During the years 1935-1937, he held a Fellowship in Medicine (Allergy) at the Cleveland Clinic of Cleveland, Ohio, where Warrick Thomas also spent a number of years. It was one of the many reasons for their close friendship. After Cleveland, Larry returned to the city of his birth, Cedar Rapids, where he practiced internal medicine, and as the years passed, devoted himself almost exclusively to allergy. He was not to live anywhere else except for the years of his military service.

In Larry's case the story would appear to be the usual one of the local boy who makes good. There is much more to his history than appears from the bare recital of the facts. Few of us have made no mistakes in judgment or in behaviour that we thought we could not set right by a change of locale. And who of us has not been unlucky where he was and thought of seeking a new beginning elsewhere? It may be that in our own city there is no place for our specialty; we can earn more and perhaps more quickly elsewhere.

Larry traveled extensively throughout the United States and had seen all that the country had to offer. He could have gone anywhere, but he had lived all of his life in Cedar Rapids as though all of the remainder of it was to be lived there. The physician who, should the going become difficult, plans to stay where he is, makes a place for himself in his community. He builds a framework within which he must for always live. By the mere process of living he takes a position from which there is no retreat. Because he knows everyone and many people whom he does not know, know him, he represents a position which is particularly his. Those of us who would go elsewhere, should an opportunity open for us, live by a different philosophy regardless of the fact that we may stay. We are permanent sojourners. Larry was a permanent resident.

There were at least five facets to Larry's life, and zestfully he lived them all, intertwined as they were and yet distinctively different. He did not wait to be called upon but, in fact, sought opportunities for work in his community. The positions he held and the work he did were characteristically his and, in fact, similar to those he filled in other spheres. Approximately twenty years ago he was elected to the Board of Directors of the Chamber of Commerce and he placed at its disposal additional time whenever there was a membership campaign. He was an active member of the Chamber's foreign visitor committee and as its most urbane representative, he met and entertained visitors for all of whom he seemed to have all the time there was.

It was only natural that he would gravitate toward membership in the United Fund Budget Committee and that he would take an interest and work for the Public Welfare Bureau. He was a member of the Pickwick Club and of the Elks and was elected President of the Cedar Rapids Country Club. He found time to help raise funds for the Cedar Rapids Symphony in which his wife played violin.

His academic life paralleled his social service activities. In 1948 he was certified in Internal Medicine and in 1950, sub-certified in Allergy. He earned his F.A.C.P. He was a Fellow of the American Academy of Allergy and of the American College of Allergists of which, after serving as a Regent for a three-year term, he became President, 1955-1956. He was Chairman of the Membership Committee. He belonged to the American Medical Writers Association and was on the Editorial Board of THE ANNALS OF ALLERGY. The Cuban Society of Allergy accorded him an Honorary Fellowship. He was an active participant in the Chicago Allergy Society, the Southwest Forum of Allergy and of the Association of Allergists for Mycological Investigation.

He somehow found time for investigational work and to write. He appeared on the programs of the national societies and took an active part in the seminars. I have never known him to refuse a request for a paper. At a meeting he was a chairman's delight because he always spoke for a shorter time than that assigned to him and could be expected to be analytical and to the point.

In general medicine, Larry was concurrently a member of the Linn County Medical Society, the Iowa State Medical Society and the American Medical Association. His colleagues elected him President of the county society, and for a term of

three years as Speaker of the House of Delegates of the State Society.

I once discovered that Larry was concurrently the President of two organizations and President-elect of a third. None of the members of any of the three knew of his positions in the others. He did his jobs smoothly and easily and with no evidence of vanity or of busy-ness.

Larry was a Catholic who practiced his religion actively and unobtrusively. No matter where a meeting was held he would, on Saturdays, if the information was not posted in the lobby of his hotel, ask the whereabouts of the nearest church. As soon as he reached his room he would telephone for the hours of the Masses for a Sunday or a Day of Obligation.

As some of the Saturday night get-togethers would often continue on until early in the morning, Larry would turn in and ask to be called, or if we were sharing a room, would depend on me to get him up, usually in time to walk to church. He almost always invited someone to go along with him or with us, and the religion into which the physician who was invited had been born did not seem to matter. Over the years a large assortment of Protestants and Jews attended their first Masses with Larry Halpin. Unless the distance was too great, winter or summer, snow or rain, they walked to the church and back again to breakfast.

I dressed more quickly than he, and the many times we shared a bedroom I waited, sitting on a bed or on an easy chair carrying on a conversation with him, while he shaved his wiry beard and laved himself with his own after-shave lotion.

Sometimes there were three or four other physicians waiting in the lobby of the hotel for him. One would sometimes ask Larry what it was necessary to do at Mass. Larry would always answer, "Watch me! Do as I do!" It was something to see some of the visitors genuflect and stand and sit and kneel and sit and stand and kneel again as the parts of the Mass demanded of them, and to watch them out of the corners of their eyes watch Larry so that they would learn how much to place in the collection plate. They would usually contribute as much as he did, but if they were not prepared with the proper denominations a larger bill would regretfully slip from their fingers.

We did not discuss religion. None of the others ever did, but there were those who were non-Catholic who regularly went to church with him. Cecil Kohn loved to tell the story of being in the breakfast room of the hotel enjoying a fresh coffee while waiting for Larry. A stranger beside him at the counter asked him whether he was making the seven o'clock. He said he was. Cecil, who was a pillar of his synagogue, went blank when the stranger leaned over and in confidential tones remarked, "In Arkansas, we Catholics are few and far between." Later when Cecil repeated the story, he became helpless with his own laughter.

It was somewhat of a mystery to me how anybody who was forced to attend so many meetings at which it was necessary for him to preside could find ample time for what was much family life. There are many physicians who do no more than practice medicine. They complain that they lack opportunities to spend any hours with their wives and children. In Larry's life there were at least, seven people, not to speak of those who lived next door and across the street and around the next corner and the next. There was his wife, Peg, his three sons and two daughters and his sister, Frances, who also lived in Cedar Rapids. I never met the older aunt who, with Frances, helped to raise him. Fran Allison lived elsewhere, but in their travels they managed to get together as often as possible.

There was somehow time to sit through a performance of the Symphony although certainly not every one. The boys were outstanding athletes and Larry managed to go to the meets and, as well, to get to play golf on Wednesday afternoons and at other times, both while at Cedar Rapids and at meetings in other cities. He was also keenly interested in spectator sports.

Whenever, at a national meeting at which he was not presiding or otherwise taking part, there was a rhubarb concerning some issue of small moment, he would nudge me and say, "The Celtics (it could just as well have been the Indians, Blackhawks or the Globetrotters) are on this afternoon. Why don't we go up to the room and listen to the radio (or during recent years) look at some T.V.?"

We would separately slip away from the hubbub and sometimes collect someone else along the way, usually Orval. The shades would be drawn. Everybody would get comfortable and once we found the station we would sit in a delectable silence while the basketball (or football or baseball or the Olympic trials or whatever) was going on. We would then separately ease our way back to the meeting where no one would have noticed our absence. If Larry was in favor of any one team he never inflicted his opinions on any of us. After all these years I cannot tell whether a team belongs to the American or National League. It was all one to Larry whether it was the Braves or the Yankees. He enjoyed a good game, well played.

It was in the fifth aspect of his life that I grew to know him best. I could study him and wish that I were more like him. Only in some respects could I imitate or copy him, but to be like him was not in me. I was as introverted as he was extroverted. He possessed that magical quality of being able, without really trying, to draw an introvert out of his shell. Extroverts are not, in the same sense, locked up within themselves, and if they do manufacture confines for themselves, no introvert can open a door for them.

Larry possessed that uncommon quality of permitting you to purge yourself of the dross of everyday living so that you became more the self

you really were, or perhaps better than the self you thought you might be. He thought so much of others; often more highly of them than they did of themselves. We are so accustomed to Donne's ". . . any man's death diminishes me, I am involved in mankind . . ." that we forget that it is also true the other way about: Because I am involved in mankind, any man's life may increase me. I remember exactly a particular incident which illustrates what I mean.

A number of us, two by two, were walking along a street in Chicago on our way to a restaurant. I had made a statement the words of which were no sooner out of my mouth than it occurred to me that they might have sounded extravagant and perhaps to represent more than was warranted by the facts, although what I said was what is scientifically accepted as the truth. Without realizing what I was doing I began to prove my verity with the sort of sentence which begins, "You can ask . . ." Larry stopped in his stride and let the others draw ahead, "Hold it," he said. "Let's you and I make a pact. I won't ever say anything to you that isn't so and don't you to me. Let's both of us depend on the other for the truth as we see it at the time. If we are not absolutely sure, we'll say so. Each of us is to understand when anything needs confirmation by time or more study. If something should turn out not to be true, we'll tell each other."

There was thereafter a greater-than-ever ease in our friendship. Neither of us had to think of the implications of what we said to the other. Neither of us passed judgment. Because there was an absolutely complete initial trust, each was prepared to wait for any needed confirmation. There were thereafter no so-called periods, but only commas and semicolons. When we met we took up where we had left off no matter how much time had passed as though we had to get everything possible into the time left to us. Intervals between telephone calls, letters, dictated discs and visits became shorter and shorter. We began to grow toward each other and in a sense into each other. Sometimes either of us would telephone the other as he was picking up the receiver to put in a call. Our letters crossed in the mail. On one occasion I telephoned him while he was typing a letter to me, and at another time he telephoned me while I was dictating a letter to him.

With the passing of time the mutual trust became deeper and broader and then changed in character. I embarked on a long investigative study, and as is usual, I uncovered some facts and relationships which, to my knowledge, had heretofore not been realized or known. They were not of earth-shaking importance but yet important enough for me to feel that the responsibility of keeping them to myself might not only be great but not good. One Sunday morning I telephoned Larry and told him how I felt. He agreed that no one who was working alone should be in the position in which I found myself. It would be wise not only to keep the usual records but to have three people with whom any new discoveries could be shared. We agreed that he would be one and that Murray Peshkin, that pillar of wisdom, should be the second and that Bernie Berman who practices in my city, should be the third. If any one of the three was so vain, because he possessed secret knowledge, that he could not resist telling others, we would get another physician. If anything happened to me, it would be Larry's job to see that the work was to be completed. It entered the minds of neither of us that he would predecease me.

Larry was my closest and as young boys will say, "my best friend." At one time I discovered that he was also the best friend of others, not of a multitude, but as Ben Jonson put it, "in worth and choice." I was not above feeling a pang of jealousy. Antipathy is, after all, as Bierce defines it, the feeling you have toward your friends' friends. There were others as Cecil (who died not long ago) and Warwick and also Orval and Homer and Mayer and Murray as well as Giles and Eloi, to mention some who were drawn to him as was I. Because of him, all of us became taller than we ordinarily would have been if only because, as his friends, one could not do anything that he might be ashamed of for you.

I soon realized that what was in Larry flowed freely from him. It was too much for one and in fact more than enough for many. It was like an everflowing spring ever in itself eternal. What he gave you was not taken from another. There was no sharing, no shortage and no depletion.

We, each of us, grew accustomed to the fact that people we did not like liked Larry and that, in turn, he saw something in them that we, often at first, did not see. It sometimes happened that his friends were drawn together and became friends of each other as well. In some instances it was not possible because the personalities were too different or took polar positions. Somehow it did not matter that Larry liked someone and was liked by someone that I loathed. No one inquired how it could be. It had to be accepted, and it was.

Larry went to the Clinic because of a small growth on the skin of his face. He had thought himself over-tired for some months, but had waited until Peg and Mollie had taken Minnie the Mink, their trailer, for a trip east where they were going to pick up my wife for a month's vacation. Giles telephoned me. It had incidentally been discovered that Larry was afflicted with a severe and progressive glomerulonephritis. The prognosis was grave. The fatal asterisk of death had been placed against his name. The blood urea levels rose slowly and an increase in cerebrospinal urea level pre-

sumably led to a convulsion which resulted in the rupture of two vertebrae.

I visited him at the hospital where in an attempt to stave off the inevitable, plans for hemodialysis were being made. He was his usual self, except that when he moved, however slightly, a spasm of pain would force him to wince and grip the rails of the bed until the pain passed. As though nothing had happened he would go on teasing the nurse or talk about his work as the Chairman of the Nominating Committee of the College.

He knew what was wrong with him and that his days were numbered. He began to enjoy each day more than he ever had, awakening with zest and going to bed with reluctance. He took pride in the smooth operation of his new car in which he drove twice weekly to Iowa City for his dialyses.

Jaimie was winning every swim meet he entered and Larry was proud of his son's successes. Larry's oldest son, Lawrence Charles (Hap), came up from Washington with his wife, Inez, who, as a registered nurse, helped look after Larry with all the love and affection anyone could muster. David was at college and returned home as soon as he could. Catherine Ann, who was expecting her baby the week Larry died, spent more time at her parents' home than she did at her own. Little Margaret Evelyn (Mollie) was her usual loving self. His sister Fran was often with him as were his many close friends of Cedar Rapids and from outside the city. When death came, he did not know it because he had a massive stroke from which he never regained consciousness. Few men who have died have been surrounded by so many people who loved them.

The flowers came from everywhere and were banked and banked and banked again. They were sent to the office and the home. They carried the names of people nobody realized Larry knew. The members of the family suggested that friends contribute to the Doctor Halpin Memorial Fund of All Saints, but there was no stopping those who wanted to send flowers over and above their contributions. The church was filled to overflowing and, as was to be expected, with people of all faiths. Eight past-presidents and the President-Elect and the Executive Vice President of the College were there.

There were those who had to return to their everyday lives. Some of us, the friends of the family, returned to Larry's home. Somebody remembered that Larry had once said that if you liked or admired what someone was doing you ought to tell him at the time. There was no use putting your love on his tombstone which, once he was gone, he could not read. Someone else said that because he lived in his friends' hearts, Larry hadn't died. He was above others and in his just content was happy in himself and unselfconsciously drew them up with him. There was no one who was not better for having known him. There were those who loved him better than he knew and also those whom he loved better than they knew.

Joanne Blazer said, "Phil and Cecil will be there waiting for him." Someone else said that it was good that at the end he had suffered no pain. It was almost as though death begged his pardon. A man I did not know remarked quietly that from now on some aspects of his life would be a little grim.

What does it matter what was said? I shall miss my friend, and I know many others will also miss him.

—Ethan Allen Brown, M.D.,
editor, in ANNALS OF ALLERGY,
23:67-75, (Feb.) 1965.

U. of I. Professor Gets Cambridge Fellowship

Harold P. Schedl, M.D., a research associate professor of internal medicine at the University of Iowa College of Medicine, has been awarded an Overseas Fellowship for the 1965-66 academic year at Churchill College of the University of Cambridge, England.

At Churchill College, a national memorial to Sir Winston Churchill, with an enrollment of about 600, one-third of the students take graduate work and research toward Ph.D. degrees. Approximately eight Overseas Fellows are selected each year from outstanding universities and colleges throughout the world to strengthen and enrich the program of the College and promote the advancement of education. The Overseas Fellows live in apartments on the college grounds, so that they may have an opportunity to meet informally in the Common Rooms of the College with colleagues and students in their own and other disciplines.

Dr. Schedl will work with Dr. Ivor Mills, chief of the Department of Investigative Medicine at Cambridge and a Fellow of Churchill College, on problems concerned with calcium metabolism, and will participate in the teaching program of the College.

Dr. Schedl graduated with honors and received M.S. and Ph.D. degrees from Yale University and an M.D. from the University of Iowa. He is the author of numerous scientific articles, a contributor to several textbooks, and a member of several professional groups including the American Physiological Society, the Endocrine Society, the American Gastroenterological Association and the Central Society for Clinical Research.

Mrs. Schedl and the couple's three children will accompany him to England. Dr. Schedl's leave of absence is subject to the approval of the State Board of Regents.

Ninth Pediatric Conference Raymond Blank Memorial Hospital, Des Moines

Thursday, April 8

9:00 a.m. "Abdominal Pain in Children," The Ninth Lee Forrest Hill Lectureship—James M. Baty, M.D., pediatrician-in-chief, The Boston Floating Hospital, Boston, Massachusetts.

10:00 a.m. "Physiology of Respiratory Distress"—Donal Dunphy, M.D., professor and chairman, Department of Pediatrics, University of Iowa, Iowa City.

11:00 a.m. "The Hemolytic Anemias: Diagnosis and Management"—Carl H. Smith, M.D., professor of clinical pediatrics, Cornell Medical College, New York City.
LUNCHEON: Served by the Raymond Blank Hospital Guild.

2:00 p.m. Case Presentations by the Raymond Blank Hospital Residents.

3:30 p.m. "Vaccination Against Virus Diseases"—Saul Krugman, M.D., professor and chairman, Department of Pediatrics, New York University School of Medicine, New York City.

5:00 p.m. Business Meeting of the Iowa Branch of the American Academy of Pediatrics.

6:30 p.m. Social Hour and Banquet, Des Moines Club. "And Freely Speak"—Philip D. Jordan, Ph.D., LL.D., professor of history, University of Minnesota, Minneapolis, Minnesota.

Friday, April 9

9:00 a.m. "Diagnosis and Management of Purpuric Disorders"—Dr. Smith.

10:30 a.m. Case Presentations by the Raymond Blank Hospital Residents.

11:30 a.m. "Differential Diagnosis of Respiratory Distress"—Dr. Dunphy.
LUNCHEON: Served by the Raymond Blank Hospital Guild.

2:00 p.m. "The Pediatrician and the Rash"—Dr. Krugman.

3:00 p.m. "The Care of Acutely Ill Children in Their Homes"—Dr. Baty.

All meetings will be held in the Auditorium of the School of Nursing, Iowa Methodist Hospital.

Registration Fee: $30.00, which includes luncheon tickets and one banquet ticket. Additional luncheon tickets $1.50. Additional banquet tickets $6.00.

For further information write to Charlotte Fisk, M.D., general chairman, 3200 University Avenue, Des Moines, Iowa 50311.

Diet in the Management of Ischemic Heart Disease

A short course designated "Diet Therapy . . . U.S.A., Conference Two" on the role of diet in the management of ischemic heart disease will be presented in the Leon Smith Room of the Des Moines Y.M.C.A., on Thursday, April 22, under the sponsorship of the Departments of Internal Medicine and Nutrition, at the University of Iowa, the Iowa Medical Society, the Iowa Hospital Association, the Iowa Dietetic Association and the Iowa State Department of Health.

8:30 a.m. Registration and Coffee Hour

9:00 a.m. "Introduction: The Problem"—Margaret A. Ohlson, Ph.D.

9:10 a.m. "The Role of Dietary Lipids"—Wm. E. Connor, M.D.

10:00 a.m. "Nibbling Versus Meal Eating"—Clarence Cohn, M.D., director of nutrition at Michael Reese Hospital, Chicago

10:50 a.m. "Does Carbohydrate Influence the Blood Lipids?"—Dr. Ohlson

11:35 a.m. The Audience Will Quiz the Experts
Panel Leader: Arthur P. Long, M.D., Commissioner of Health
Dr. Connor
Dr. Ohlson
Dr. Cohn

12:30 p.m. LUNCHEON
"What the State Medical Library Has to Offer You"—Mrs. Marion C. Samo, acting librarian
"The Iowa Hospital Plan"—Mr. F. W. Pickworth, director of the Division of Hospital Services, State Department of Health

2:15 p.m. Workshop: "How can we, as dietitians, contribute in the treatment of ischemic heart disease, and advance knowledge in the field?"

3:30 p.m. Adjournment

1965 IMS ANNUAL MEETING

"Washington Investigations"

A Special Luncheon Address

By

CLARK R. MOLLENHOFF

Pulitzer Prize Reporter

Cowles Publications—Washington Bureau

12 O'clock Noon

Monday, April 12—Fort Des Moines Hotel

For further details, see the "Green Sheet" in this month's Journal.

LAW AND ETHICS

Of Interest to Occasional Dispensers

The IMS Judicial Council thinks that the following exchange of letters will contain "comfortable words" for doctors of medicine who may have been worried to some extent on reading about charges brought by FDA agents, several months ago, against some Iowa osteopaths:

(Letter to the U. S. Food and Drug Administration)

The Judicial Council of the Iowa Medical Society would like . . . a statement outlining a physician's responsibility in labeling drugs that he is about to dispense to patients.

The councilors' attention has been called to the prosecution of D. C. Hume, D.O., and one or more other Iowa osteopaths, several months ago, for possessing and/or dispensing inadequately labeled medications, and it has occurred to them that various procedures which are common to Iowa M.D.'s such as dropping a few tablets into a plain envelope for a patient to carry away in a handbag or purse, may constitute violations of the law.

(The reply)

There is nothing in the legislative history of the Federal Food, Drug, and Cosmetic Act to indicate that any consideration was given to the question of whether a physician must place instructions or any other information on the label of a drug he gives personally to his patient. It is our view, however, that such dispensing must be on the basis of a *bona fide* doctor-patient relationship and that drugs so dispensed and the amounts given the patient must be in keeping with acceptable standards of medical practice. Further, we would expect that the disepnsing physician would see to it that his patient received adequate instructions on the proper use of the drugs, whether these instructions are given orally by the physician or in written form.

The only part of the [Federal Food, Drug and Cosmetic] Act that deals with labeling requirements for a drug dispensed on prescription is section 503(b)(2), page 46, and pertains primarily to the usual dispensing of a prescription drug by a pharmacist. This section requires that a drug dispensed on the written or oral prescription of a practitioner shall bear a label containing the name and address of the dispenser, the serial number and date of the prescription or of its filling, the name of the prescriber, and, if stated in the prescription, the name of the patient, and directions for use and cautionary statements, if any, contained in such prescription.

. . . We have prosecuted physicians under the Federal Food, Drug and Cosmetics Act for dispensing excessive quantities of amphetamines and barbiturates where the "dispensing" was obviously in the nature of a commercial sale and not the dispensing of an amount of drug needed for treating the patient's condition in a normal doctor-patient relationship.

—WM. DWORKIN
Advisory Opinions Branch
Division of Industry Advice
Bureau of Education and Voluntary Compliance
Department of Health, Education and Welfare

Washington, D. C., 20204
February 25, 1965

May a Physician Tell Parents About Their Daughter's Pregnancy

A question raised by Dr. Gail M. Proffitt, of the Student Health Service at Iowa State University, Ames, concerned the duty and responsibility of physicians toward unmarried, pregnant girls. The following opinion on the subject will no doubt be of interest to other physicians in general practice. The IMS attorney's conclusion should be read in the light of his analysis of the law, which is also set forth below.

CONCLUSIONS

1. Section 9 of the Principles of Medical Ethics happens to be a fair statement of the law. It provides:

"A physician may not reveal the confidence entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law, or unless it becomes necessary in order to protect the welfare of the individual or of the community."

2. Thus, it would ordinarily be the duty of a physician to refrain from communicating the fact of pregnancy to any other persons, including the parents of a minor girl. However, if the physician, in good faith and for sound reasons, determines that the welfare of his patient would be furthered by enlisting parental sympathy, chastisement or other cooperation, then he should feel free to do so without fear of violating the ban on betrayal of a professional secret.

3. Dr. Proffitt's specific question was whether or not the physician would have any liability should the girl in question go elsewhere and secure an abortion. It is difficult to conceive of any theory by which such liability could be asserted, much less

successfully. However, it would be a different matter should the physician suggest, encourage, or otherwise promote this course of action, and if the girl should disclose to the physician an intention to obtain an abortion, her parents should be notified.

ANALYSIS OF THE LAW

The ethical rule stated above is reinforced by statute. Paragraph 147.56 (7), Code of Iowa 1962, denominates as "unprofessional conduct" (a grounds for revocation of a physician's license) the "willful betrayal of a professional secret." There are no Iowa cases interpreting this statute, nor are there any Iowa decisions on analagous problems. But the cases referred to below, involving similar statutes, indicate that this rule is not an absolute ban on disclosure.

There is an old case from the District of Columbia that sheds some light on the question. *Brice v. Curtis,* 38 App. Dc. 304, 38 LRA (NS) 69 (1912), is an action for libel by an unmarried woman against a physician who had pronounced his diagnosis of pregnancy in the presence of her sister. The court, after alluding to the confidential nature of the relation between the plaintiff and the defendant-physician, held for the physician upon the grounds that the plaintiff had in effect consented to a disclosure of her apparent condition to her sister. However, insofar as that case had been interpreted as giving the physician a species of "qualified privilege" to disclose her condition to persons with an interest in the condition of the plaintiff, it was overruled by a 1947 decision of the U. S. Court of Appeals for the District of Columbia. In *Washington Annapolis Hotel Co. v. Riddle,* 171 Fed. 2d 32, it is held that the *Brice* decision is only supportable upon the theory of implied consent to the disclosure.

Simonson v. Swenson, 177 N.W. 831, 9 ALR 1250 (Nebr. 1920) is a case in which the patient's action against the physician was bottomed on the alleged breach by the physician of his duty to preserve confidences. In this case, the physician prevailed, for his disclosure that the plaintiff was probably afflicted with syphilis was "qualifiedly privileged" because of the interest in the public generally to prevent the spread of the disease. Among other things, the court said:

> By this statute, it appears to us a positive duty is imposed upon the physician, both for the benefit and advantage of the patient as well as in the interest of general public policy. The relation of physician and patient is necessarily a highly confidential one. It is often necessary for the patient to give information about himself which would be most embarrassing or harmful to him if given general circulation. This information the physician is bound, not only upon his own professional honor and the ethics of his high profession, to keep secret, but by reason of the affirmative mandate of the statute itself. A wrongful breach of such confidence and a betrayal of such trust, would give rise to a civil action for the damages naturally flowing from such wrong. Is such a rule of secrecy, then, subject to any qualifications or exceptions? The doctor's duty does not necessarily end with the patient; for, on the other hand, the malady of his patient may be such that a duty may be owing to the public and, in some cases, *to other particular individuals.* (emphasis ours) 9 ALR at pp. 1252, 1253.

The court's reasoning, then, took the tack that because the confidential nature of the physician-patient relationship was in derogation of the common law, it should be strictly construed, and, so construed, it must be expected by patients that if their condition is contagious, then the information may be transmitted to others. The privilege of the physician to so make the information known is, in the opinion of the Nebraska court, analogous to the qualified privilege in slander and libel cases which, generally, casts a privilege around communications which are given in response to a duty supposed in good faith to exist.

Berry v. Moench, 8 Utah 2d 191, P. 2d 814, 73 ALR 2d 315 (1958), is a libel action against a physician based on his report to another physician concerning a former patient. The recipient physician had no interest in the matter except insofar as he had been asked by the parents of a young lady to see what he could find out about her suitor. The court recognizes the qualified privilege—which it called a "conditional privilege"—in the following language:

> We do not doubt the correctness of defendant's contention that the responsibility of the doctor to keep confidences may be outweighed by a higher duty to give out information, even though defamatory, if there is a sufficiently important interest to protect. In such event there arises a conditional privilege to make a disclosure reasonably necessary to protect such interest. 73 ALR 2d at 321.

Because the physician in that case had not exercised reasonable care to ascertain the truth of the matters contained in his report, his claim to a qualified privilege failed, even though the court did hold that the well-being of the young lady was of sufficient interest to give rise to the question.

Of course, it is well to keep in mind the reason for the rule of confidentiality which is to encourage persons to seek medical advice without fear of embarrassment and the like. Tested in this light it becomes apparent that only compelling reasons should require the disclosure of the situation which Dr. Proffitt describes. However, this is not to say that in the circumstances described, or in other circumstances where minor females are involved, there should be an absolute ban on communicating this information to the parents. If, in good faith, the physician determines that the welfare of his patient would be furthered by enlisting parental sympathy, chastisement or what have you, then certainly he could successfully claim that the disclosure was qualifiedly privileged. Parents do have the authority and duty to care for and

protect their minor children, and a communication to them in furtherance of that duty is one basis upon which such disclosure can be justified.

Another and additional question which no doubt is not of as much general interest arises because of the presumed attendance of the girl in question at Iowa State University. It is entirely possible that she has, in her admission agreement, along with her parents, consented to full disclosure of her physical condition as it exists from time to time. However, this would depend upon facts of which we have no knowledge, although it can again be stated as a general proposition that the relationship between a college or university and a student is a contractual relation, and the terms of the contract must be consulted. It may be of more than passing interest that there is at least one appellate court decision recognizing the right of a university to maintain discipline among its students free of interference by the court, "a task which demands special experience and is often one of much delicacy, especially in dealing with girl students. . . ." *Woods v. Simpson*, 146 Md. 547, 127 Atl. 882, 39 ALR 1016. Thus, if the University had in fact extracted from the student her consent to making known to her parents infractions of rules—and presumably there was an infraction of a rule—then the physician might be obliged to report the incident to the University, and the University in turn report it to her parents. It is even arguable that the disciplinary right of the University is sufficient to make the disclosure even in the absence of a prewaiver or preconsent if this action is, in the discretion of the University officials, one calculated to promote discipline among the students. However, the duty which the University itself may or may not have is a separate and distinct problem from that involving the duties of physicians generally. We do not presume to advise the University in that regard. At the same time, however, it is well to keep in mind that a physician-patient relationship does arise, at least insofar as the confidentiality of communications is concerned, in any situation where the patient has reason to believe that the physician is treating him or her as a patient. Thus, the fact that the physician is paid by other than the patient does not ordinarily add to or detract from the physician's duty in regard to confidentiality.

—JOHN H. RAIFE

Report on a Survey of Attitudes of Physicians With

Patients in After-Care Homes

HERBERT L. NELSON, M.D.
Iowa City

DURING THE SUMMER MONTHS of 1964, data were being collected on after-care homes in Iowa (nursing, custodial and county homes) as a necessary prelude to comprehensive mental-health planning. Surveys by mail and also direct visits were being utilized. However, it soon became apparent that we were obtaining little or no information from the physicians responsible for the medical care of patients in these homes. Consequently, we decided to expand the study to include general practitioners throughout the state, asking them to estimate the number of patients they had in each type of home and to estimate how many they felt were mentally ill. We decided to ask them to comment on the nature of the facilities and care available in their geographical areas, and to suggest whatever changes they thought would be desirable. In addition, we decided to ask them to indicate what part, if any, of medical-school education and postgraduate programs should be directed specifically toward the care of patients living in nursing homes, custodial homes and county homes.

In August and September, 1,204 questionnaires were mailed out, and by January 1, 1965, a total of 339 had been returned, representing 28 per cent of the sample. Of those, 36 had to be discarded for various reasons such as the physicians' having retired or died, or having moved out of the state and left no forwarding address. Three hundred three usable responses remained, or 25 per cent of the original 1,204 questionnaires. Included were 13 replies from physicians who had no patients in after-care homes but chose to comment on the topics covered in the questionnaire.

The entire group reported a total of 8,098 patients, of whom 4,137 were in nursing homes, 1,574 in custodial homes, and 2 387 in county homes, and 3,453 of them were said to be mentally ill. One third of the physicians said they had one or more patients in a county home (52 counties represented), and 39 claimed to have 10 or more (33 county homes with 2,136 patients). A number of these last were county physicians with responsibility for 50 to 250 patients each, most of whom are mentally ill or retarded.

Dr. Nelson is project director for "A Comprehensive Mental Health Plan for Iowa," at the Iowa Mental Health Authority.

GENERAL ATTITUDES OF RESPONDING DOCTORS

Before proceeding to data and remarks concerning facilities and training, it is important for us to review some of the unsolicited philosophic comments that reflect divergences in the attitudes of physicians who participated in the study. A small number indicated a degree of pessimism by statements such as: "We are keeping many people alive, but if there is little for them to do, if they are in pain, if they are unhappy, or if they are mentally unaware, what progress does this represent?" or "As far as I can see, the county-home patients are put away by society to live without pain until they die. They will not return to society," or "Frankly, I am not 'sold' on the 'cure' of mental patients, and feel that a lot of good money can be thrown after bad in attempting it."

Several questioned the practice of transferring patients from state institutions to after-care homes in the patients' communities: "It is *not fair* to discharge all of these patients from state hospitals. State hospitals should be and are better equipped to care for these patients than are the 'nursing homes' or 'county homes.' " Another said, "It seems that the sick ones with real problems always are sent home or discharged to nursing homes, and the ones who don't have severe problems are forever being put in by their relatives or by themselves."

A few respondents reproved society for rejecting the aged and chronic mentally ill: "I feel that the so-called 'problems' arise chiefly because nowadays the aged are placed in homes and feel left out, discarded, forgotten, lonesome and unwanted, and they feel all the other reactions incident to suddenly finding themselves in a new environment." One physician expressed his belief "that the lack of concern for this group of people . . . is one of the glaring, unpleasant realities in our society which is top-heavy with service clubs, auxiliaries, church circles, gray ladies and fraternal orders, whose activities—presumably charitable or for community service—actually revolve about the social functions of their respective organizations." Another asserted, "If the public spent as much time with mental patients as it does in selecting 'queens,' it just might give some poor devil the incentive to understand his epilepsy and to become self-supporting."

Still others were openly hostile. One physician answered no questions, but exclaimed bluntly, "Information is badly needed on how to fill out county forms for payment!" Some complained of excessive paper work "which is time-consuming and without benefit other than making jobs for more state employees."

Far more respondents, however, showed a serious interest in the problems of after-care homes, and gave evidence of their concern for the many chronic patients in their care. Several offered to give of their time in planning or providing training, and most made suggestions such as the following: "I feel that if any real changes come about, they will have to come from public pressure, a willingness of the county supervisors to spend more money and to provide some overall program for the patient, and also a closer supervision from the Board of Control in the care of these patients."

THE PHYSICAL ADEQUACY OF AFTER-CARE HOMES

With regard to the physical adequacy of after-care homes, there were numerous references to new nursing homes and county homes in particular areas, though there were also indications that additional homes are needed, "especially in the smaller communities." Forty-two physicians commented specifically about overcrowded conditions: "Most nursing homes are very crowded, some pathetically so, with four or five elderly to a single room." Eighteen remarked on the inadequacy of the physical facilities, pointing out that they are old private homes offering no privacy. A few mentioned the odor: "Most of the nursing homes are hot, smelly wooden boxes where divorced women attempt to make a living by being in charge of operations," and "Visiting one of these homes on a hot, humid day makes the men's rest rooms at half-time during a football game in Iowa City smell like a rose garden."

Nine practitioners said there is difficulty in finding beds for their patients who are reluctant to go to a nursing home in a larger, distant community. Eleven proposed that after-care homes should be better located: "The main change I should like to see would be to have the nursing home adjacent to the hospital, so laboratory tests could be readily available and transfer to the hospital would be simplified. Many times a patient should be admitted to the hospital, but transfer promises to be so involved that added risks are often taken." Though several physicians seemed to favor "the smaller private homes," one commented, "A nursing home should be large enough to justify hiring a registered nurse for each of the three eight-hour shifts. Size also is necessary to justify physiotherapy and food-preparation equipment." Another contended, "Our new county home should have been eight or 10 times larger, and called a nursing home instead of 'The Poor House.' "

In view of recent adverse publicity, it is of particular interest that fire hazards were mentioned only three times in all the comments on facilities.

PATIENT-CARE PROGRAMS

The questions concerning care and programs in these homes were intended to elicit constructive criticism, and it is quite apparent that many of the respondents gave a lot of thought to the matter. Yet, in spite of our invitation to criticize, 51 doctors declared that care was entirely adequate in the homes that they serve. There were many complimentary remarks, such as the following: "In spite of the fact that the building is an old one, it is kept clean, and the patients are kept clean and happy with the Sisters' tender loving care and good food. This nursing home is set up to be as much like a hospital as possible, with regular charting and

nursing services, and with medicines dispensed from a central drug room, thereby avoiding many of the problems that a small nursing home run by untrained people might have." A county physician concluded, "Though I have been in many 'private' nursing homes, I have found none equal to the care patients receive in our county home. The patients are kept clean and receive at least one physical exam yearly, and the cooperation in work assignments is remarkable."

As was to be expected, most of the adverse reports on program were in the area of activities (85) and rehabilitation (64). The following comments are typical: "This is one of the glaring faults (no activities or rehabilitation) in most facilities, be they new or run-down," and "In general, I feel that the principal lack in old folks' homes is productive activity. Those who are able should be encouraged to undertake any constructive activity their abilities will permit." One physician asserted, "Activity programs too often consist of rolling the patient over so that soiled sheets can be changed (if, indeed, there is that much effort)." Another questioned whether the efforts of volunteers may not impede rather than aid in rehabilitation: "The pathetic feeling of uselessness that is common to old people in custodial and nursing homes is not helped by well-meaning gray ladies, candy-stripers, etc. The human need to be needed can be satisfied *only by being needed*—e.g., in the work around the home."

Suggestions for improving the activities and rehabilitation included the following: "I believe that much of such programs should be carried out by a voluntary community effort," "The aged need more spiritual help, and need someone to exhibit an interest in them," "This being a small town, I feel that relatives provide recreation and stimulation for patients by visiting them frequently, taking them to their homes for short visits, etc.," "At our county home, anyone who can work *does something,*" and "Perhaps a 'floating' physiotherapist program (much like the county nurse program) would be a great boon to these patients, for many wouldn't become chronic if they had adequate physiotherapy."

MEDICAL CARE

Only 12 replies specifically mentioned inadequate medical and physical care. Far more indicated that the nursing homes do pretty well when one considers the amounts that are paid them. One physician related that "nursing homes in this community receive $6.00 per day. Considering the pay, they do a very good job. They provide board, room, nursing care, community rooms for TV, radio and visiting, and a certain amount of physiotherapy. This is good, in view of the fact that a rooming and boarding house or a hotel charges just as much." Seven doctors voiced the opinion that care would be much improved if more medical facilities were available within the building. Eight remarked that more attention should be given to food—both as to quality and as to the manner in which it is served. "When the food is served to patients with the idea of saving all possible on the grocery bill, the situation should be looked into."

Relatively few respondents made reference to psychiatric consultants. Two indicated that they were aware that a psychiatrist visits the county home regularly, and one complained bitterly that "far too often, the consultation facilities are hardly those that lend themselves to the providing of prompt attention for patients who need some psychiatric care, but are trying to remain in their own homes, to continue their occupations, etc." There was also the remark: "It appears at times that psychiatrists are reluctant to provide consultation unless the patient can be hospitalized, and seem reluctant to see a patient in their offices for short-term supportive psychiatric care." From another large community came the remark: "Our local psychiatrists are in no way interested in this type of case, and are of no help whatever." Still another physician alleged, "Aged patients with depressive symptoms get 'the brush off' when they are referred to a psychiatric unit."

There were a number of suggestions pertaining specifically to county homes. At least one county reported that medical responsibility is rotated every three months among seven M.D.'s. One doctor stated that a psychiatric orientation of the county farm should be insisted upon. "Some of these people could be sent to the state mental facility for screening every few years, and some of them, perhaps, could be helped." Another proposed, "Circuit-riding psychiatric residents at the state mental hospitals could perform a service to the patients (and themselves) by regularly checking on some of these people—in person!"

ADMINISTRATION

In the area of administration, the greatest number of responses concerned finances. At least 50 G.P.'s expressed feelings like these: "Our two better nursing homes are wonderful, but who can pay the price?" "Often the patient accepts the less qualified home because of the cost," "The standard of care in custodial homes in our area is necessarily low because welfare rates do not permit operators to hire sufficient trained personnel, even when they are available," "It seems that when the profit motive is introduced, as it is in our fanciest nursing homes, the care of patients is deplorable," and "Homes that accept patients on social welfare have to charge exorbitant prices to private patients to absorb Social Welfare's inadequacies."

Twenty-two acknowledged that record-keeping in their homes is deplorable, but few proposed any solutions. One said, "Records are inadequately kept, but it should be the responsibility of the doctor in attendance." Another physician recommended that a simple record system be standardized and required in all nursing homes.

There were about a dozen comments on the difficulties of coordination with local agencies: "Physi-

cians must take the leadership role in coordination," "Locally, we have three different agencies that care for ill patients, and they should be centralized under one single office," and "Generally we do well in coordinating with other community agencies, but it takes two years to learn whom to call for what service." One lost soul probably reflected the confusion that must reign in many minds when he said, "One of the most difficult problems today is to comprehend the various overlapping social programs—their regulations, care of patients and billing requirements." He then gave at least 15 or 20 examples of the difficulties he faces every day.

Three doctors felt that there should be better screening procedures before patients are admitted to after-care homes, but an equal number claimed that the homes are too selective. Five replies asked for more frequent and rigid inspections of homes, and one of them suggested that homes be graded for the degrees of senility or mental disease that they might accept. One physician contended, "Rigid inspection of these homes, and weeding out the obviously unsuitable ones by whatever legal means could be provided, would be the best way to upgrade the care given to these patients." Another voiced "a definite need for more nursing-home inspectors who can give constructive suggestions," and one expressed concern that "no community agency is interested in the private residents of nursing homes in our area," as opposed to welfare recipients, whose needs are watched over by the county welfare office staff.

Perhaps all problems of administration would disappear into thin air if this "nutshell" solution were adopted: "We need more funds and freedom for the State Department of Health to operate. More inspections of existing homes are needed. Legislation requiring nursing homes to meet and maintain standards, and also increased rates for care of Welfare Department patients."

THE PERSONNEL OF AFTER-CARE HOMES

Of course the subject of personnel received a lot of comments, both favorable and unfavorable. Thirty-eight respondents referred to a shortage of staff, e.g., "Most places are lucky to have enough help to get the patients fed, let alone participate in activity programs." Forty-four others asserted that nursing-home personnel, including managers, were inadequately trained. Five remarks pertained to their poor attitudes: "Too many of the operators are 'do it yourself' practitioners, and too few of them are either trained or familiar with nursing procedures," or "Much care is provided by nurses' aides, many of whom think an agitated elderly patient is just being stubborn, or is a 'mean old man,'" or "Most of the nursing homes . . . are run by elderly and/or retired, disgruntled nurses who refuse to keep records or who hire poor help to bathe the patients and change the bed sheets," and "Most seem to resent a physician's calling, and their only interest in the doctor is to get him there to sign a death certificate when a patient seems terminal, so as to relieve them of any charges of neglect."

A dozen replies contained pleas for more registered nurses in after-care homes because "the frequent use of hypos, catheters, etc. demands nurse care—*not* the services of practical nurses." But they weren't unanimous in that attitude. One remarked, "An experienced nurse in the home is a help if she doesn't get to expect everyone to go to sleep, arise and defecate on schedule every day," and another expressed his preference for L.P.N.'s, who "are as good as, if not better than, the new, new breed of R.N.'s (executives!)." There was one call for more social workers, and even one for a part-time psychiatrist for a county home.

Perhaps the many references to proper attitude are best exemplified by this statement: "I think improved facilities are fine, but the main thing, of course, is to have sufficient numbers of *dedicated* personnel who are willing to work with such patients."

TRAINING PROGRAMS

The final area to be covered is that of training for the care of the elderly and chronic mentally-ill in after-care homes. Special emphasis on such problems in the curricula of medical schools was called for by 155 physicians, but 56 of them cautioned that it could be overdone. Fifty offered no comments on this topic, or indicated that they felt no additional time should be devoted to it at the undergraduate level. An additional 28 made the special point that they encountered no unusual problems in dealing with such patients, thus implying that their own training had equipped them satisfactorily for work of this type. Of those who favored additional emphasis in medical school, 32 stressed practical experience through clerkships or preceptorships, and cautioned that didactic lectures should be kept to a minimum.

Postgraduate courses in the care of chronic mentally-ill and elderly patients were called for by 132 physicians, but again there were those (21) who feared they might be carried to an extreme. Forty-nine of the 132 asked for special emphasis on drug therapy because of problems they had encountered with dosages and side effects.

The pessimists expressed doubts in such comments as the following: "I'm not sure this can be taught. Most of my classmates and I skipped the courses in mental illness, general practice and office management that were offered when we were in school. Are students different now?" "It should be taught, but *what is it??* How does one teach patience or sympathetic understanding? The country doctor of 40 years ago handled the elderly quite competently in their homes, aided by the patient's children and other relatives. As a result of cultural and economic factors, family help is leaving the picture, and the care function is assumed by indifferent organizations such as county, nursing and custodial homes which, like corporations, have no bodies to kick or souls to damn."

Another had this to say: "In medical school most students think light of these problems. They are all of the opinion that their only problem in medicine will be the treatment of acute illnesses. It is only after some time in general practice that they come to realize the importance of this phase of medicine."

There also were those who questioned whether the medical schools are really prepared to do such teaching. Remarks such as these were common: "Those who do the teaching, it would be my guess, don't have patients in nursing homes, and wouldn't know what they were talking about." "I might suggest that mental health authorities visit these nursing homes with a G.P. before they attempt to direct postgraduate programs of this type." "Treatment at University Hospitals, with no consideration of costs or of who is to pay the bills is quite different from the realities which the physician in private practice must consider at all times." "Maybe the professors could help, too, if they would realize that for every case of even so common a disease as acute appendicitis, the physician who attends nursing-home patients will see 30 or 50 old people with anxiety reactions because they don't have a bowel movement every day." "I think much of this could best be taught by a G.P. or internist who is frequently involved in these problems, rather than by someone on the medical school staff." "With special reference to the psychiatric department, it should be emphasized that the mind of an elderly person degenerates more from loss of personal identity and integrity than from the results of sclerosis or drugs. We must find a way to preserve personal dignity in the declining years of life. Medical students should be made aware of this problem, and must be prepared to infuse whole communities with a better understanding of the full meaning of 'growing old' for the aging individual, for his family and for the community."

Others criticized the present trend toward specialization in medicine. "Isn't the likelihood of anyone's following a G.P. career quite remote? I no longer deceive myself about the prospects of G.P. replacements for the older ones of us. You are fooling yourself if you think the prospects are good. A general-practice career is discouraged at every level, beginning with the freshman year of medicine. The medical schools have encouraged anything but general practice; hospital accreditation boards insist on departmentalization, even in the smaller hospitals; and as you know, more and more hospital seminars are closed to G.P.'s." Medical schools were further taken to task for their emphasis on research: "Also, I think that medical schools are no longer schools. They are simply research centers with a few schoolrooms in connection. What in the world would they do without dear old N.I.H.! Did you see the editorial 'Rigged Research' in the NEW ENGLAND JOURNAL?"

Of course there were many and varied statements and recommendations from those who favored additional training in the care of the chronic mentally-ill aged: "Ninety per cent of my practice consists of conditions that were skimmed over in medical school while we studied commissurotomy, of which I've had three cases in 15 years." "The student should be exposed to the magnitude of the problem, and should actually see and experience caring for these people on a personal basis in a nursing-home situation." "I have no idea how many quarters the medical student spends with the psychiatrists, but I do know that psychiatry is infinitely more important than biochemistry. Why not give psychiatry 20 per cent of the total hours of instruction?" "The time students spend studying rare diseases could be better spent making rounds with a competent nurse who knows how to care for the many 'little ailments' that are so common in old age." "Every student could benefit from a three- to six-week tour of duty in caring for the aged. It is a completely different phase of medicine. Training in the care of the feet, circulatory disorders of the extremities, control of the agitated and restless patients, and particularly the nutrition of these people—all these should be mandatory." One physician suggested the possibility of making geriatrics an elective or postgraduate course, but making it a prerequisite to licensure for anyone going into general practice. Another said, "I believe every M.D. should have at least two years of general practice before taking specialty training. He would learn something!"

Six physicians stressed that rehabilitation should be included in such training. "Nothing will be gained from lectures on care or problems until rehabilitation is pushed, and this is another insurmountable economic wall until we get out of our space ships and back to people on earth." "Rehabilitation is what I feel I need training in. There are too few physical therapists to go around, and we should be taught how to instruct hospital personnel and patients' relatives in physical therapy." "Medical schools should emphasize practical rehabilitation technics that can be administered by the family or semi-trained personnel."

CONCLUSION

Several pages of comments could be added to reflect further the philosophy of general practitioners who minister to the needs of these patients. They would like medical students to know that one must exercise love, consideration, kindness, gentleness, attentiveness, interest, understanding, concern, empathy, "TLC" and plain common sense. They emphasized that "time and patience enable one to practice the Art of Medicine in a true sense." "If you have 'it' (the Art of Medicine), you can care for these patients, and if you don't, you never can." One physician said, "Many of these elderly persons have to be treated almost like 'veterinary type' patients. Some can't communicate with their doctor because of hearing problems, aphasia, or mental illness. A doctor

finds himself treating symptoms and using educated guesses far too often for comfort, but there is little else he can do under the circumstances." Another cautioned, "The tremendous differences encountered, at times, in the physiology and pharmacology of these patients render their care and treatment distinctly different from that of the younger population. Far too often it appears that these differences haven't been adequately recognized."

Three respondents emphasized that medical students should learn to treat their patients' relatives for their symptoms of anxiety, hostility and guilt feelings, and to teach the families to participate in the care of these patients. A more introspective medic postulated, "We doctors—or too many of us —are afraid of the senile, the extremely feeble and the 'hopeless cancer' patients because they bring us too close to death. And many of us put off until 'tomorrow' our consideration of that ultimate condition. We prefer patients for whom we can do something, or whom we can 'cure.' These hopeless cases arouse too much anxiety in us, until we face up squarely to it. In truth, we can do much for these lonely ones. We don't have to 'cure' them. We can give them medical and psychological help, but the best medicine we can give them is *ourselves.* We can pause and listen to them, so that these very dependent people have a friend and a 'father.' Nurses and doctors in training need to discover this. Our training has been too mechanistic."

At least one practitioner showed his interest in preventive psychiatry when he said, "It also appears that our most pressing need, in the years ahead, will be to prepare doctors for more of a role in counseling these people who are preparing for retirement or who have entered retirement age. We must enable doctors to recognize the marked psychological disturbances that often occur during the unsatisfactory adjustments of this transition period."

Still another forward-looking member of the medical profession made this observation: "Many of the counties—even the smaller counties—have mental health centers, with psychiatrists, social workers and psychologists available. The programs of these centers will aid greatly in caring for mental problems. I feel that having such people available will help the local general practitioners. Perhaps it would be good for them to conduct symposia at the local level."

Certainly the man just quoted emphasizes the present trend toward providing mental health services at the community level. It is no longer acceptable to treat the mentally ill by sending them for extended visits to remote institutions. In every instance, treatment should be as short as possible, as close to home as possible, and as slightly disrupting to the patient's family and to his employment as possible.

Such a wealth of thoughtful, stimulating comments, ideas and suggestions (even the sarcastic ones) from Iowa's general practitioners will provide food for thought to anyone even remotely concerned with mental health—whether physician, social worker, politician, layman, nursing-home operator, nurse, aide or educator. Every one of their statements contains a kernel of wisdom and experience just waiting to be woven into the pattern of all-encompassing "Comprehensive Community Mental Health."

Macular Dystrophy

Macular dystrophy is second to cataract as a cause of blindness, according to Dr. Alson E. Braley, head of ophthalmology at the University of Iowa College of Medicine. Dr. Braley has recommended to the National Institute of Neurological Diseases and Blindness that a research project be started to study it, for he estimates that 7.5 million Americans have the disease and says that the number of cases is increasing yearly.

Macular dystrophy is not associated with external causes, Dr. Braley says. Most cases are hereditary, and are common in brothers and sisters. The disease produces a pigmented scar on the fovea—the tiny depressed area in the retina which is the clearest point of vision. Although there are different types of macular degeneration, all varieties progress slowly and eventually occur in both eyes. In macular dystrophy a lesion appears on the retina and passes through a series of stages. These stages differ with the age of the person and his hereditary make-up.

Hemorrhages from the lesion are important to the physician in predicting the course of the disease, Dr. Braley commented. Although they disturb the person's vision, vision may be restored if the hemorrhages do not extend into the fovea. Disturbances in the pigment of the retina are frequent in macular degeneration. The pigment begins to accumulate in masses leaving areas void of pigment. As these masses spread, vision is lost.

Development of crystals in and around the masses helps produce the scar on the fovea, Dr. Braley explained. The crystal material seems to start within the deep layers of the retina and then to spread upward. A low-fat, low-cholesterol diet will often reduce the crystal deposits and improve vision.

Macular dystrophy is common in older persons and is characterized by the failure of central vision, Dr. Braley noted. While the disorder is not usually apparent until the patient attains an age of 70, visual disturbances without ophthalmoscopic findings may be present at about 50 years of age. He recommended an ocular examination before the sixtieth birthday for every member of a family in which there has been a case of macular dystrophy.

All Physicians Should Attend The 1965 Annual Meeting of the IMS

The annual meeting of the Iowa Medical Society —its 115th—will be held at the Fort Des Moines and Savery Hotels, in Des Moines, April 11-14. We think that all Iowa doctors can benefit their patients, as well as themselves, by taking time from their practices so that they may attend it.

State medical society meetings fill needs that are quite different from those that similar gatherings filled in years past, but are scarcely less important. When our lives were less complex, and when art predominated over science in the practice of medicine, state meeting programs were entirely scientific—to the extent that the status of medical knowledge permitted—and such gatherings gave physicians a major opportunity to improve technics that most of them used every day. Then, with the veritable explosion of medical discoveries which began about 30 years ago and has continued unabated since that time, the medical specialties proliferated. For a time, state medical meetings offered complex schedules of lectures so that not only general practitioners but each group of specialists could be helped in keeping up-to-date. Finally, it became impractical to present speakers of special interest to each group of specialists at each state-society annual meeting, and for that reason and others, the specialties organized themselves at the state level so that they might present their own annual or semi-annual scientific programs. Moreover, the medical schools increased their schedules of postgraduate conferences for physicians having various concerns.

The annual meeting of the Iowa Medical Society, this month, will be a fine example of state sessions of a new sort—combining scientific papers and panel discussions of importance to all private practitioners, lectures on governmental programs in the health field, presentations on child-behavior problems and other difficulties that bulk ever larger in contemporary America, and discussions of medicine's relations with other professions and occupational groups.

MONDAY, APRIL 12

At the opening session, in the Fort Des Moines Hotel on Monday morning, April 12, the IMS president, Dr. Otis D. Wolfe, of Marshalltown, will speak on the topic "Morality and the Welfare State." The Honorable Harold E. Hughes, governor of Iowa, is to appear next on the program. Dr. David E. Price, of Washington, D. C., deputy surgeon-general of the United States Public Health Service, will then talk on "Medical Services in a Changing World." Finally, on the Monday morning program, there will be an address on "Juvenile Delinquency" by the Honorable Byron B. Conway, of Wisconsin Rapids, Wisconsin, president of the National Council of Juvenile Court Judges.

Mr. Clark R. Mollenhoff, a distinguished reporter for the DES MOINES REGISTER AND TRIBUNE and the MINNEAPOLIS TRIBUNE AND STAR in the national capital, will be the speaker at the luncheon meeting on Monday noon. His address, "Washington Investigations," he says, is to include his first-hand observations regarding the Bobby Baker affair, the TFX contract-letting and other recent and controversial matters into which Congressional committees have conducted inquiries.

The first of the presentations on clinical medicine will be a panel discussion of "Newer Developments in the Control of Coronary Heart Disease." Ailments of the heart and great vessels rank first among the killers in this country, and whether or not a particular physician undertakes to treat them in his practice, he is likely to encounter hitherto undetected cases in patients who have sought his help for something else, or he must treat people who are concurrently receiving medi-

cations for those disorders. Thus, the current status of therapy for coronary heart disease is of interest to each of them. Dr. Lewis January, of the U. of I. College of Medicine, will serve as moderator, and the participants will be Drs. Wm. E. Connor and John C. Hoak, of the U. of I., and Dr. Wm. B. Kannel, of Framingham, Massachusetts, a heart-disease epidemiologist, and Dr. Wm. L. Proudfit, of the Cleveland Clinic.

Regarding the topics for discussion, Dr. January says, "The symposium will deal with much of the newest practical and theoretical material relating to the control of coronary heart disease. Much needs to be done in detecting 'coronary-prone' individuals, and in persuading them to modify some of the predisposing factors. In addition, the panelists will review the latest knowledge about diagnostic and therapeutic approaches to coronary heart disease. The role of lipid metabolism in the development of atherosclerosis remains a problem, and the use of anticoagulants continues to develop and change."

The final hour of the Monday afternoon program will be devoted to the physicians' concerns in exploration beyond the earth's atmosphere. Robert R. Gilruth, D.Sc., of Houston, director of the NASA Manned Spacecraft Center, will discuss "Manned Space Missions," including technics used in preparing men for space flight, and Col. Philip G. Keil, U.S.A.F., M.C., will speak on "Space Medicine."

On Monday evening, various specialty groups are to hold either informal get-togethers or business meetings for the election of officers, at various places in Des Moines. The schedule was printed as a part of the IMS Annual Meeting program in the March issue of the JOURNAL.

TUESDAY, APRIL 13

The Tuesday morning session will open with addresses by Donovan F. Ward, M.D., of Dubuque, president of the American Medical Association, and Howard R. Bowen, Ph.D., of Iowa City, the newly-installed president of the University of Iowa. Dr. Ward, the second Iowan to head the AMA, will speak on "Today's Foremost Issue Affecting Medicine," and Dr. Bowen has chosen to discuss "The Next Twenty Years in Higher Education." Iowa physicians will want to honor both of them by attending their addresses, and will be deeply interested in what they have to say.

The final two presentations on Tuesday morning will consist of a paper on clinical surgery, "The 'Right' Treatment for Cancer of the Breast," by Richard L. Varco, M.D., a professor of surgery at the University of Minnesota Medical School, and a lecture by Neal W. Klausner, Ph.D., a professor of philosophy at Grinnell College, entitled "Philosophy and Medicine: A Common Ground."

At the noon luncheon on Tuesday, James W. J. Carpender, M.D., of the University of Chicago, will deliver the Arthur Erskine Lecture on "Radiation Therapy and Your Patient." The Erskine Lecture usually concerns the treatment of cancer, but it is especially appropriate for it to deal with radiotherapy for cancer, since Dr. Arthur Erskine, of Cedar Rapids, was one of the pioneers who contributed significantly to the development of x-ray technics. Dr. Carpender says that he intends to point out the conditions which should receive x-ray therapy and those which should not, and to explain the reactions and, specifically, the tumor response which physicians can expect their patients to show after undergoing x-ray therapy.

At 2:00 p.m., on Tuesday, a panel discussion of gallbladder disease will be presided over by Frank Glenn, M.D., of New York City, surgeon-in-chief at the New York Hospital-Cornell Medical Center. Dr. Glenn says, "The prevalence of calculous biliary-tract disease throughout the United States accounts for a great deal of disability. The accepted definitive treatment is surgical, and it constitutes the most frequent intra-abdominal operation. Developments in diagnosis, and in the surgical procedures employed, have greatly reduced the risk and improved the results of operations for this condition in recent decades." Diagnostic technics are to be discussed by Richard B. Capps, M.D., a clinical professor of internal medicine at the University of Illinois Medical School, and Charles B. Puestow, M.D., a clinical professor of surgery at the same institution. Robert E. Wise, chairman of radiology at the Lahey Clinic, Boston, will discuss the question "When to Operate," and John T. Reynolds, M.D., a clinical professor of surgery at the University of Illinois Medical School, will discuss the prevention of postoperative complications.

At 3:45 p.m., on Tuesday, Giles Koelsche, M.D., a consultant in medicine at the Mayo Clinic, will talk on "Auto-Immune Diseases." These are allergies, and Dr. Koelsche will discuss the disorders in which they may play a part. At 4:15 p.m., Gerald Solomons, M.D., director of the Child Development Clinic at the U. of I. will discuss "The Hyperactive Child." Over-activity in children, Dr. Solomons observes, is a common problem in every medical practice, but such a youngster causes difficulties, also, for his parents and for teachers. The lecture will outline the causative factors, the treatments that can be used, and the role of counseling in the management of such cases.

Meetings of the IMS House of Delegates will be held at the Savery Hotel on Sunday, April 11, beginning at 9:00 a.m., and on Wednesday, April 14, beginning at 8:00 a.m. All members, whether delegates or not, are urged to attend those sessions, and the reference committee meetings that will be held shortly after the House adjourns on Sunday. They should also plan to attend the President's Reception, Banquet and Dance on Tuesday night. "Caduceus Capers" is a benefit dance for the Woman's Auxiliary Health Education Loan Fund.

Please visit the exhibits. The exhibitors help pay the expenses of the Annual Meeting.

THE DOCTOR'S BUSINESS

The Effect of Inflation Upon Life Insurance

HOWARD D. BAKER
Waterloo

The major function of life insurance is to provide *financial protection* for the dependents in the event of the death of the head of the family. Its second important function is to accumulate money that the policy owner can use in an emergency—or it is, at least, in all insurance policies that provide for cash values. We never recommend life insurance for investment purposes, but the premium paid for all types of permanent life insurance includes cash values that represent fixed-dollar investments which must be reckoned with in investment planning.

Most investors recognize the *principle* that money kept in savings deposits, bonds and similar fixed investments loses purchasing power during periods of inflation. But data reflecting developments in the life insurance industry strongly suggest that the majority of investors haven't yet realized the *extent* to which prolonged inflation has eroded the savings of life insurance policy holders.

From 1940 to 1959, more than $129 billion of the purchasing power of life insurance evaporated! The accompanying table illustrates the year-by-year losses. Over that 18-year period, the buying power of every life insurance policy in existence in 1940 was *halved!*

Men who rely on life insurance to protect their families are faced with a choice of two alternatives: (1) to increase their protection periodically to offset inflation, or (2) to risk having their families exist on a fraction of the protection that they originally planned for them. There is little reason to expect that the deflation that would be necessary to a restoration of original purchasing power will occur in the years ahead. Rather, there is reason to expect more inflation.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Under these circumstances, what can the buyer of life insurance do? How can he provide the increasing protection that his family may need? How can he minimize the erosion of his dollars? As a hedge against a possible loss of insurability, a portion of every life insurance program should consist of permanent, level-premium coverage, but inflation is bound to continue, and thus it is un-

ANNUAL LOSSES IN INSURANCE VALUES
1940-1958

Year	Insurance In Force (Billions)	Per Cent Loss In Dollar Value	Loss to Policyholders (Billions of Dollars)
1940	$111.6	– 1.00%	– $ 1.116
1941	115.5	– 8.93	– 10.314
1942	122.2	– 8.32	– 10.167
1943	127.7	– 3.22	– 4.112
1944	137.2	– 2.10	– 2.881
1945	145.8	– 2.19	– 3.193
1946	151.8	–15.34	– 23.286
1947	170.1	– 8.28	– 14.084
1948	186.0	– 2.72	– 5.059
1949	201.2	+ 1.98	+ 3.984
1950	213.7	– 5.52	– 11.796
1951	234.2	– 5.48	– 12.834
1952	253.1	– .88	– 2.227
1953	276.6	– .70	– 1.936
1954	304.3	+ .52	– 1.582
1955	333.7	– .35	– 1.168
1956	372.3	– 2.80	– 10.424
1957	412.6	– 2.96	– 12.213
1958	458.4	– 1.70	– 7.793
		Total	–$129.037

wise to place funds in high-premium endowments, annuities and limited-pay insurance plans.

Until the economics of life insurance change to keep pace with our economy, more emphasis must be placed upon various types of term protection. A plan providing for permanent insurance (ordinary or whole-life) for strictly *permanent* needs, and term insurance for *all temporary* needs must be strictly adhered to.

Besides maintaining a basic insurance program, it is of utmost importance that the investor should "insure his insurance dollar" by investing as many additional dollars as possible in variable-dollar commitments such as mutual funds or other comparable equities. This method of "balancing" will provide him at least a degree of protection against shrinking of dollar values in the years to come.

In this age of decreasing values, it becomes doubly important to act upon the advice of competent counsel in all financial matters. Before embarking upon a full-scale insurance program or making substantial changes in an existing program, it is well worth while to have an objective review and evaluation made of one's present insurance and one's needs.

Aborting Staph. Epidemics in Newborn Nurseries

Striking success with a new approach to the control of staphylococcal epidemics in hospital nurseries was reported by Dr. Henry R. Shinefield, associate professor of pediatrics at New York-Cornell Medical Center, during a symposium at the University of California Medical Center in San Francisco on February 20. The method: deliberate colonization of the newborn with a nonvirulent strain of Staphylococcus aureus before the epidemic strain can establish itself. It applies to clinical practice the recently reported phenomenon of "bacterial interference"—the rejection of new staphylococcal strains by tissues already colonized with others.

Bacterial interference has been studied clinically, with very favorable results, in four nurseries that were experiencing staph. epidemics resistant to other methods of control. The hospitals were in widely separated parts of the country—New York, Cincinnati, Atlanta, and Pineville, Louisiana. Babies were inoculated in the nose and umbilicus, within two hours of birth, with a strain of S. aureus known to be non-pathogenic. In later phases of the research, reinforcing inoculations were given at 12 hours. Successful "takes," with extensive nasal and skin colonization, were achieved in the great majority of babies —up to 90 per cent.

Babies inoculated with strain 502A had a sharply reduced incidence of staphylococcal disease and of colonization with other strains, particularly the 80/81 phage type that is characteristic of hospital staph. outbreaks. Persistence of 502A, and its transfer to mothers and families, were found on follow-up at one month.

Inoculation in the nursery apparently protected even those babies who were subjected later to conditions carrying a high risk of staphylococcal disease such as cardiac surgery and severe viral bronchitis.

In Cincinnati, where 584 babies were inoculated during a three-month period, the 80/81 strain disappeared from the nursery entirely. It gradually reappeared, along with other staph. strains, when the inoculation program was discontinued.

Dr. Shinefield and his co-workers advocate the use of bacterial interference to abort nursery epidemics of staph. infection, *but not as a routine practice in healthy nurseries.* "Never should the use of this organism be substituted for good nursery technic, adequate facilities and supervision, or strict surveillance of infants during their stay in the hospital and after discharge," he declared.

Staphylococcus strain 502A (phage type 7/47/53/81) originally was isolated by Dr. Shinefield from a nurse, and subsequently from numerous babies in the New York-Cornell nurseries. These babies and their family contacts had a striking lack of staphylococcal disease. Use of the strain to recolonize adults following antibotic therapy is now under study as a possible means of treating furunculosis patients and carriers of hospital staph. organisms.

MOST STAPHYLOCOCCI ARE HAND-BORNE

During the same symposium, Dr. Edward A. Mortimer, of Western Reserve University, Cleveland, reported the results of studies designed to reveal whether the nurse's hands are more important than her respiratory tract in transmitting staph. infections to infants. Earlier research had shown the nurse's hands to be the major factor in baby-to-baby staph. transmission.

Nurse A read aloud to half the newborns, spending 10 minutes beside each bassinet four times during the baby's first 48 hours. The other half were handled for like periods by the same nurse. Nurse B, who was a carrier of a staph. strain quite different from Nurse A's, handled the infants whom Nurse A had read to, and read to those whom Nurse A had handled.

Differences in the staph. colonization patterns were striking. Nurse A's organism appeared five times as often in her "handled" babies (25 and 5 per cent). Nurse B's organism appeared twice as often in the infants whom she handled as in those whom she read to (22 and 11 per cent). These findings, Dr. Mortimer said, suggest a need for more effective and practical means of interrupting hand transmission of bacteria.

Iowa Association of Medical Assistants

9th Annual Convention
Hotel Hanford—Mason City, Iowa
May 14, 15, 16, 1965

The Mason City Medical Assistants will be hostesses for members and guests of the Iowa Association of Medical Assistants at its 9th annual convention to be held at the Hotel Hanford, Mason City, on Friday, May 14, through Sunday, May 16, 1965.

Preceding and independent of the convention, a Leadership Seminar will be conducted by Mrs. Marian Little, of Cedar Rapids. Mrs. Little is a past president of the Linn County Medical Assistants, of the Iowa Association of Medical Assistants and of the American Association of Medical Assistants, and is one of 14 AAMA officers schooled at the University of Iowa in Leadership Training. This Seminar will be held at the Hotel Hanford on Friday, May 14, for officers and committee members and chairmen on both state and local levels.

9:00-11:45 a.m. ORIENTATION AND ASSIGNMENTS
PURPOSE AND GOALS OF ORGANIZATION
COMMUNICATION SKILLS
12:00 Noon LUNCHEON
1:15- 5:00 p.m. COMMITTEE WORK
PARLIAMENTARY PROCEDURE
ROLE PLAY (INDIVIDUAL PARTICIPATION)
LEADERSHIP EVALUATION

The registration fee for this seminar is $4.00, which includes luncheon, coffee breaks and AAMA educational materials. Checks should be made payable to Miss Helen G. Hughes and sent to her at 201 Lowell St., Iowa City 52240. Please give your name, address and chapter affiliation, and indicate whether you are an officer or a committee member.

CONVENTION PROGRAM

Friday, May 14

7:00- 9:00 p.m. REGISTRATION
RECEPTION AND WELCOME TO MASON CITY BY MASON CITY ASSOCIATION OF MEDICAL ASSISTANTS
8:00 p.m. MEETING OF EXECUTIVE COUNCIL

Saturday, May 15

8:00-10:00 a.m. REGISTRATION
8:00 a.m. HOUSE OF DELEGATES
10:00 a.m. GENERAL ASSEMBLY
10:30 a.m. "THE KNOW-HOW OF PARLIAMENTARY PROCEDURE CAN BE FUN"—Miss Marie Schalecamp. Miss Schalecamp is an instructor of Communication Skills at Mason City Junior College. She is a graduate of the University of Iowa, author of a book on communication skills, and has competed in the International Toastmistress Contest representing the northwest region.
12:00 Noon LUNCHEON
"THIS IS THE WAY"—Mrs. Max Goldman. Mrs. Goldman was born in Japan. She has a B.A. degree from Wellesley College, is a member of the Des Moines "Know Your Neighbor Panel," and is listed in *Who's Who of American Women.*
2:30 p.m. "LIFE AND MEDICINE IN LAMBARÉNÉ"—Dr. Dale Weber. Dr. Weber is a graduate of the University of Iowa College of Medicine and is now serving his internship at Broadlawns Hospital in Des Moines. His 1964 preceptorship was spent with Dr. Albert Schweitzer in French Equatorial Africa, now known as Gabon.
"TWO MONTHS IN INDIA"—Dr. John B. Dixon. Dr. Dixon is a board certified ophthalmologist in Mason City. He is a graduate of the University of Kansas College of Medicine.
6:30 p.m. SOCIAL HOUR
BANQUET—ENTERTAINMENT

Sunday, May 16

9:00 a.m. IOWA MEDICAL SOCIETY PANEL
1. OUR IOWA MEDICAL SOCIETY
2. IOWA MEDICAL FOUNDATION
3. IOWA INTERPROFESSIONAL ASSOCIATION
4. IOWA PHYSICIANS' POLITICAL LEAGUE
11:00 a.m. BRUNCH
12:00 Noon INSTALLATION OF OFFICERS
1:00- 2:00 p.m. POST-CONVENTION BOARD MEETING

The general theme of the convention will be "Medicine Around the World." The registration fee for the convention is $12.50, which includes all educational sessions (except the Pre-convention Seminar), Saturday luncheon, social hour and banquet, and Sunday brunch. Checks should be made payable to the IAMA Convention and sent to Mrs. Edris Clawson, 27 S. Indiana, Mason City, Iowa.

All medical assistants are welcome to attend, and we urge early registration. Hotel reservations are to be made directly with the Hotel Hanford.

See you in Mason City May 14-16?

—HELEN G. HUGHES

Iowa Chapter of the American Academy of General Practice

Refresher Course for the GP

Eugene Smith, M.D.

Many doctors claim they can do 12 months' work in nine months, but *not* in 12 months. They are the physicians who realize that good medical meetings increase their efficiency and enthusiasm. The greatest of these meetings is the Annual Refresher Course for General Practitioners held at the University of Iowa College of Medicine each February.

Two hundred thirty-one interested doctors attended the 1965 Refresher Course—34 of them from such states as Arizona, Michigan, Louisiana and Indiana. One of the members of the guest faculty was Dr. William F. Mengert, professor and head of obstetrics and gynecology at the University of Illinois College of Medicine. Another of them, Dr. Virginia Apgar, of the famous Apgar score, the director of the National Foundation of Congenital Malformations, explained all about genes, chromosomes, heredity and environment. Indeed, she made some parts of her very complex subject entirely clear by telling us that when a young couple have a baby and the infant looks like his father, the determining factor is heredity, but when he looks like the next-door neighbor, it's environment!

There were 69 members of the faculty of the University of Iowa Medical School on the program. Those men, without exception, submerged their pet interests and claims to fame in order to bring us only material to be used in our daily, bread-and-butter practice of medicine. Dr. William Keettel's part of the program painted a picture of Jack Benny holding aloft an OB forceps in one hand and a Tycos in the other, pleading, "Now, what do I do?"

Aesculapius likened meetings to sandwiches which are usually 10 per cent meat. This meeting was 90 per cent meat, and it certainly was devoured eagerly and assimilated. The morsels were such as could be put to use as soon as we reached home. Outstanding movies were shown in the evening. One on management of the alcoholic and another on physical examination of the newborn for hidden congenital defects were especially practical.

This Annual Refresher Course should be a MUST for every generalist in the state!

Plan to meet your friends in the Academy's Hospitality Room during the annual meeting of the Iowa Medical Society, April 11-13. Room 329, Hotel Fort Des Moines

Two Trauma Days at U. of Nebraska College of Medicine

The Tenth Annual Trauma Day program at the University of Nebraska College of Medicine, this year, will actually occupy two days, May 3-4. Topics to be covered on May 3 include "problems, stigmata and legal implications of the 'battered child' "; "skiing injuries—snow and water"; "injuries from falls or crushing injuries"; "hunting accidents—gunshot wounds of the extremities, penetrating wounds of the abdomen, and injuries of peripheral vessels"; and "intestinal obstruction." The topics for May 4 include "gastrointestinal neoplasms"; "preoperative evaluation of heart function, acute renal failure, and functional monitoring of resuscitation"; "paraplegia: acute care, management of the urinary tract, and rehabilitation"; "fractures in children"; "prophylaxis for tetanus and gas gangrene"; "anesthetic requirements for the 'emergency operation' "; "the place of prophylactic antibiotics in surgery"; "postoperative voiding problems"; and "pitfalls of biliary-tract operations, parotid-gland operations and tumor chemotherapy."

The guest faculty members for the two-day course will be Richard H. Hansen, LL.B., an attorney from Lincoln; Irvin E. Hendryson, M.D., assistant clinical professor of surgery at the University of Colorado; and Owen H. Wangensteen, M.D., head of surgery at the University of Minnesota. About 16 of the University of Nebraska medical faculty will participate.

Entertainment for physicians and their wives will include a tour and briefing at Offut Air Force Base on the afternoon of the first day of the meeting. The fee for the course is $40.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., COMMISSIONER

Drugs and Biologicals Available From the Iowa State Department of Health

VENEREAL DISEASE CONTROL

Procaine Penicillin (Aqueous or Oil Suspension)
1,200,000 units for male and a minimum of 2,400,000 units for female gonorrhea cases; 4,800,000 units to 12,000,000 units for syphilis cases, depending upon diagnosis. Aqueous penicillin is the drug of choice in the treatment of gonorrhea.

Benzathine Penicillin G (Bicillin)
Distribution restricted to syphilis cases—2,400,000 to 9,000,000 units, depending upon diagnosis.

Achromycin (250 mg. capsules)
Distribution limited to those medically indigent syphilis cases in which penicillin sensitivity has been definitely established.

These drugs are available without cost to physicians for the treatment (control) of reported cases of venereal disease. Request for drugs should be made by physician directly to the Division of Venereal Disease Control, Iowa State Department of Health 50319, and must be accompanied by case report.

IMMUNIZING AGENTS

Triple Toxoid (Diphtheria, Tetanus and Whooping Cough)
In accordance with the American Academy of Pediatrics 1964 Red Book on the Control of Infectious Diseases, we prefer that this be used for children under six years of age.

Diphtheria-Tetanus Toxoid (Combined, Absorbed or Precipitated—Adult Type)
According to the same Pediatrics Red Book standards, this is the material recommended for immunization of persons six years of age and older. Pediatric type is recommended for immunization of persons under six years of age.

Poliomyelitis Vaccine
Salk and Sabin (polyvalent) varieties are stocked.

Typhoid Vaccine Triple (Typhoid, Para A and Para B)

Smallpox Vaccine

This group of immunizing agents is distributed through the usual patterns of sending it to any physician for any persons who are indigent or whom he deems to be medical hardship cases. Also, the triple toxoid, diphtheria-tetanus toxoid, poliomyelitis vaccines and smallpox vaccine will be sent to counties, towns or cities for immunization programs, provided the State Department of Health has received a statement that the county medical society of the area concerned has approved the immunization program. Vaccines mentioned above (in this paragraph) are currently limited to persons eighteen years of age and under and to pregnant women. Typhoid vaccine is ordinarily not used as a part of the immunization program. The physician may request it not only for indigent or medical hardship patients but also for any persons who have been, or possibly have been, exposed to a known case of typhoid fever or to a known typhoid carrier. Typhoid vaccine is also available for use in "disaster conditions."

RABIES CONTROL

Duck Embryo Anti-Rabies Vaccine
This is recommended in lieu of brain tissue vaccine especially for persons who have received brain tissue vaccine previously. It should not be used in persons sensitive to egg protein. Usual treatment is 14 doses.

Anti-Rabies Serum
This is limited to use in persons who have been bitten about the face and neck or who have extensive bites on other parts of the body and for such of those patients who can be given the material within three days after receiving the bites. It does not replace anti-rabies vaccine but serves as an adjunct in certain situations.

Rabies Vaccine (Brain tissue)
No longer carried in stock because of lack of demand. However, for those who are sensitive to egg protein, this material can be made available.

These rabies materials are sent directly to physicians upon request. If the physician states that the patient cannot pay for the vaccine or serum, he is not billed for it. (See announcement on "Products and Indications for Anti-Rabies Treatment," dated July 11, 1964.)

HISTOPLASMIN

Supplied in 1 cc. vials or 10 skin-test doses each.

Furnished upon request of any physician regardless of the economic status of the patient.

TUBERCULIN

Not available at this time because of lack of funds. We hope again to supply this material after July 1, 1965.

SNAKE ANTI-VENOM

Enough of this material for one treatment is kept at the following Poison Centers set up by the Division of Maternal and Child Health:

Iowa Poison Center	Iowa Methodist Hospital, Des Moines
Poison Sub-Center	St. Joseph Mercy Hospital, Mason City
Poison Sub-Center	Lutheran Hospital, Fort Dodge
Poison Sub-Center	Dickinson County Memorial Hospital, Spirit Lake

VACCINES OCCASIONALLY REQUIRED FOR INTERNATIONAL TRAVELERS

These, such as cholera and typhus vaccines, are not supplied through the State Department of Health. The physician may purchase any of the vaccines except yellow fever vaccine through his local pharmacy. Since yellow fever vaccine is very fragile, it may not be given at any place other than a certified yellow-fever immunization station. For this reason, a yellow fever vaccination center has been set up at the University Hospital Student Health Service, in Iowa City. The vaccine is given only on Wednesdays, from 10 a.m. to 12 m., by appointment. The telephone number is (319) 337-3111, Ext. 247. For more information on immunizations for international travel, see release on "Immunizations for Overseas Travel," dated December 1, 1964.

VACCINIA IMMUNE GLOBULIN (VIG)

The American National Red Cross has undertaken a program for the production and distribution of sufficient VIG to meet the needs of the country. Since the scant supply of this rare blood fraction could be dissipated if it were used when not indicated, seven physicians on the staffs of prominent medical colleges throughout the country have been appointed as volunteer Red Cross consultants to assist in the distribution. Any physician who feels that VIG might be required for a patient should telephone the nearest consultant, whose name, address and telephone number may be obtained from the nearest Red Cross regional blood center. If it is agreed that the condition of the patient will benefit from treatment with VIG, the consultant will authorize its shipment from the nearest regional blood center. Fifteen of the 54 Red Cross regional blood centers, chosen because of their geographical location, have been stocked with VIG. These regional blood centers have a 24-hour coverage and are equipped to arrange immediate transportation to the attending physician by the most rapid means available.

Consultant located nearest to physicians in Iowa:

Irving Schulman, M.D.
Professor and Head, Department of Pediatrics
University of Illinois College of Medicine
840 S. Wood Street
Chicago, Illinois 60612
Telephone No.: (312) 663-6711

Alternate:

Marvin Cornblath, M.D.
University of Illinois College of Medicine
840 S. Wood Street
Chicago, Illinois 60612
Telephone.: (312) 663-6714

MEASLES VACCINE

Although we definitely advocate the use of measles vaccine, the Department cannot furnish it at this time because of the present costs of the vaccine.

GAMMA GLOBULIN

All gamma globulin received by the State Department of Health is from the American Red Cross, which allocates it quarterly to all states in the United States. The amounts received are very small. The State of Iowa no longer receives amounts sufficient to let us furnish it to physicians for routine modification or prevention of cases of red measles. Furthermore, we can no longer supply it for community school use for prophylaxis against infectious hepatitis.

We can distribute it to physicians only for *indigent or medical hardship persons* who have been directly exposed to known cases of infectious hepatitis, red measles or German measles. We find that the amounts we receive quarterly are adequate if we restrict distribution in the following manner:

1. For such persons exposed to **measles,** only when the persons are children under 2, or older children who are suffering from some debilitating condition such as rheumatic fever or diabetes, or are recovering from a recent severe illness.
   DOSAGE: Prevention, 0.1 cc. per pound of body weight.
2. Distribution is limited to very close or family contacts of a diagnosed case of **infectious hepatitis.** There are no age restrictions for eligibility, since we know that an adult is more likely to have a severe case than is a small child.
   DOSAGE: Recommended dosage scales vary from 0.01 cc. to 0.03 cc. per pound of body weight, with a maximum dosage of 4 cc. This means that any adult over 130 pounds would

receive a 4 cc. injection. We prefer a median range, with a minimum dose of not less than 1 cc. and a maximum of 3 cc. With this dosage, clinical cases will not develop unless the patients were in the very last days of the incubation period when the gamma globulin was given.

3. For such persons exposed to **German measles**, distribution is permitted only for pregnant women in their first trimester of pregnancy. DOSAGE: The majority of carefully studied research reports indicate that dosages of less than 20 cc. are likely to be ineffective. Recommended: 20 to 30 cc.

Supplies are no longer large enough to permit us to use the depot distribution system. We do, however, attempt to keep a small supply in our Regional Health Offices. Physicians may procure the gamma globulin either from their Regional Health Office or from us at the State Department of Health.

No gamma globulin is currently available from the State Department of Health for **poliomyelitis prophylaxis.**

SHIPMENT OF VACCINE

Except for (a) emergency shipments, such as those of rabies vaccine, and (b) gamma globulin, which is not affected by temperatures outside of the refrigerator, biologics will not be shipped from the State Department's offices after Thursday noon of each week. This regulation is followed because shipments filled later than that time probably wouldn't reach their destinations by closing time on Friday, and would lie in post offices over the week-end without proper refrigeration.

Because oral vaccine must be shipped in dry ice, thus making shipping charges excessive, no order will be accepted for less than 100 doses of oral poliomyelitis vaccine.

We normally cannot guarantee shipment of large orders of biologics, such as might be used in a school or area program, without a minimum of a week's notice. We prefer at least two weeks' notice for large orders.

Cancer Referrals Requested

The Radiation Branch of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Maryland, is asking the cooperation of physicians in referring patients for continuing studies of Hodgkin's disease, metastatic lung disease and Ewing's sarcoma. Referrals of patients with histologically proved Hodgkin's disease, patients with a presumptive diagnosis of malignant bone tumor, and patients with well-defined, measurable, bilateral lung metastases (from any primary site) are needed.

Patients with presumptive radiographic diagnoses of malignant bone tumor should be referred prior to establishment of the diagnosis by biopsy, in order that they may be admitted for biopsy and immediate institution of therapy.

Patients with Hodgkin's disease should be referred before receiving any treatment, so that they may be admitted for baseline studies prior to radiotherapy. In particular, referrals of patients with disease clinically limited to areas either above or below the diaphragm are requested.

Physicians interested in having their patients considered for admission and treatment may write or telephone:

Ralph E. Johnson, M.D.
Clinical Center, Room B1B-41A
National Institutes of Health
Bethesda, Maryland 20014
Telephone: (301) 656-4000, Ext. 65457

Phenylketonuria

Early detection and treatment of children with phenylketonuria (PKU), an inherited metabolic disease that produces mental retardation, can prevent retardation, but the treatment presents certain difficulties, according to the American Academy of Pediatrics.

The Academy's Committee on the Handicapped Child, in a statement appearing in the March issue of PEDIATRICS, the journal of the Academy, said: "If PKU is detected early, and the infant started on the proper diet before six months of age, and then is 'adequately' maintained, the child usually will demonstrate borderline to average intelligence at five years of age. The earlier treatment is begun, in general, the better the result."

However, there is "considerable discrepancy of opinion" regarding treatment, the Committee said. "The enthusiasts say that with adequate mass screening, diagnosis and early treatment, phenylketonuria can be eliminated as a cause of mental retardation; the doubters believe that there is need to improve screening procedures and that the efficacy of treatment leaves much to be desired."

Phenylketonuria is characterized by the lack of an enzyme needed to break down phenylalanine, an amino acid found in proteins. When the enzyme is missing, the partially metabolized products of phenylalanine (phenylketones) build up in the blood, producing brain damage.

When the disorder is discovered early enough, the infant may be placed on a special diet low in phenylalanine, and mental retardation prevented or, at least ameliorated.

Much of the difficulty in evaluating treatment results from the fact that an adequate and reliable diet first became available in this country only in late 1958. In addition, because early screening tests have only recently come into general use, only a few patients have been discovered within the first month of life. "Even they have been

treated for less than six years, and this period of time is inadequate for assessing child development and projecting eventual intellectual ability on optimum treatment," the Committee said.

There is general agreement concerning the need for careful diet maintenance and for frequent determinations of the concentration of phenylalanine in the blood. However, there is confusion and lack of uniformity of opinion as to what constitutes adequate control of dietary intake and as to the blood levels of phenylalanine which should be maintained.

Further complicating the evaluation of treatment are the problems of individuals who have PKU biochemically but are of normal intelligence, and the practice of mixing results of treatment in patients discovered late (after nine months of age) with results achieved in those who were discovered early.

Maintenance of treatment also presents problems. It is easy during the bottle-feeding period, but it becomes difficult when the child begins to forage for himself. Then parental guidance, discipline of the child, and knowledge of the phenylalanine content of foods and food substitutes are of crucial importance. A particular problem is the lack of "truly palatable bread substitutes with consistencies similar to actual bread or toast," the Committee said.

Any evaluation of the results of dietary treatment must take into consideration a number of uncontrolled variables that affect the outcome. "Included are the differing initial levels of intelligence and phenylalanine tolerance in each child, the differing heredities of children (even in the same family), and the differing abilities and motivations of parents in maintaining the diet," the Committee said.

It is clear that children can be helped if the problem is detected early enough and if adequate treatment is begun promptly and maintained adequately, yet this conclusion must not lead to unrealistic expectations or to over-enthusiastic application of treatment programs. The Committee added: "Some parents are either unwilling or unable to maintain dietary treatment. Over-rigidity of dietary management has led to early death, presumably from insufficient protein intake or from hypoglycemia. Over-hospitalization for rigid control has deprived children of the normal stimulation and affection of home and family, thus preventing normal psychological maturation.

"Exaggerated predictions for normal development, regardless of the age of discovery and irrespective of the strictness of the diet or of the hereditary endowment, have led to frustration and discouragement on the part of both pediatricians and parents."

In conclusion, the Committee said, "Much more data, taking into account all the known variables must be accumulated and carefully analyzed before definitive statements can be advanced regarding the precise value of diet in preventing or ameliorating phenylketonuria. This will require considerable time. A collaborative study to evaluate management of this disease would be valuable."

Morbidity Report for Month of February, 1965

Disease	Feb. 1965	Jan. 1965	Feb. 1964	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	479	358	600	Dubuque, Hancock, Jefferson, Johnson, Polk, Scott
Typhoid fever	0	0	2	
Smallpox	0	0	0	
Measles	1077	621	198	Cass, Dubuque, Polk, Scott, Tama
Whooping cough	7	13	11	Pottawattamie, Scott
Brucellosis	4	11	12	Allamakee, Buena Vista, O'Brien, Story
Chickenpox	977	1338	631	Clay, Crawford, Des Moines, Dubuque, Polk, Scott
Meningocccic meningitis	0	0	1	
Mumps	696	487	1802	Clay, Des Moines, Floyd, Pottawattamie
Poliomyelitis	0	0	0	
Infectious hepatitis	64	116	55	Cerro Gordo, Des Moines, Dubuque, Scott, Woodbury
Rabies in animals	19	24	38	Hardin, Kossuth, Linn
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	20	24	33	For the state
Syphilis	50	71	105	For the state
Gonorrhea	204	154	195	For the state
Histoplasmosis	0	2	6	
Food intoxication	0	0	0	
Meningitis (type unspecified)	6	3	7	Cedar, Dubuque, Iowa, Marshall, Polk, Wright
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	1	0	
Salmonellosis	19	5	9	Polk
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	1	1	Polk
H. influenzal meningitis	3	1	1	Appanoose, Bremer, Muscatine
Amebiasis	0	1	2	
Shigellosis	7	3	3	Winneshiek
Influenza	3792	3	306	

Woman's Auxiliary News

Thoughts From the President

State and county Auxiliary reports are a joy to read, and present tangible evidence that Auxiliary activities do reflect the high ideals of medicine. The myriad of interests and accomplishments of our members stretches from the community level to the far corners of the globe. I know that reports are often viewed with disdain by those whose task it is to complete them, but the information they supply provides a composite picture that all can view with pride.

The old saying that learning is the occupation of a lifetime, I shall never dispute, and the equally old adage that learning can be a source of joy, I heartily endorse. Serving as your Auxiliary president this year has convinced me of the truth of both.

There has been much for me to learn, many places where I had to seek information, and many people for me to learn from. Attendance at national meetings and conferences and contact with officers of other states led me to rich fields of knowledge.

I early discovered that the Iowa Auxiliary is the envy of doctors' wives in many other states. Few of our counterparts receive the support and cooperation that we get from our Iowa Medical Society. An Auxiliary provided with its own administrative secretary is a rare rarity. To our Iowa physicians, the Auxiliary extends a heartfelt "thank you" for their generous financial assistance and unstinting help in all of its endeavors.

The opportunity to visit our organized Auxiliaries is pure joy, and certainly one of the president's most rewarding experiences. The enthusiasm and abilities of our members constantly reaffirm my faith in the potential of our organization.

I regret that presidents have so few opportunities to visit with our growing number of members-at-large. An occasional letter, telephone call, or word from their district councilors does let us know that many of them are active in their communities, and that they make valuable contributions to the achievement of Auxiliary purposes.

To each of you—whether members of organized Auxiliaries or members-at-large—I extend my sincere appreciation and my congratulations on a job well done. Your constant willingness to lend a helping hand, your many words of encouragement, and your sharing of interests and experiences, I shall treasure always.

I have learned many things, but there are many things for me yet to learn. I know that the ever-expanding scope of Auxiliary undertakings will provide me many new avenues for learning, and that continued Auxiliary participation will provide me many new sources of joy.

To serve as Auxiliary president has indeed been a wonderful experience.

—Janet Ellis

Fight Tetanus

Some time ago, announcement was made of the poster program against tetanus that was being jointly planned by the Woman's Auxiliary to the American Medical Association and the Department of Community Health and Health Education of AMA. Budgetary provision for this campaign has now been made, and posters are available in reasonable quantities.

The objective of this project is to place posters on immunization against tetanus at strategic places in every community where the Woman's Auxiliary is organized, and—hopefully—where there is even one member-at-large. Such places include schools, department stores, banks, and other locations where the posters will attract wide attention.

A supply of posters has been received by the state Auxiliary, and will be available in adequate numbers to county presidents and Community Service chairmen. These posters may be obtained in the "Exhibits Area" at the Annual State Meeting.

International Health Activities

I should like to quote a passage from A SHIP CALLED HOPE, a book by William B. Walsh, M.D., the creator of the project to spread good will all over the world: "It is up to us who are free and blessed to help bring about a world in which there is no reason to have war." This is a most interesting book and assists one in realizing how much work was done to put over this program. A recent issue of READER'S DIGEST CONDENSED BOOK has published it.

Only a few county Auxiliaries have reported to me their contributions to the "International Health Program." I am most anxious to send a good report to our state president, Mrs. H. G. Ellis, and to Mrs. Floyd K. Anderson, the national chairman.

A few weeks ago I sent a box to the "World Relief Depot," in Detroit, and received an ac-

knowledgement of the eighteen "Johnny Coats" from the Marion County Auxiliary. I was also advised of the organization's change of address, which I urge each county chairman to note:

World Medical Relief, Inc.
11745 Twelfth Avenue
Detroit, Michigan 48206

—HELEN RALSTON, *Chairman,*
International Health Activities

Baby Sitter's Safety Planning Guide

The National Safety Council's Baby Sitter's Safety packet is designed as a guide for planning and executing community projects on safety with respect to baby sitting. Safety and child care are so interwoven that education on how to care for children must include training in safe practices. The light housekeeping duties sometimes required of a sitter necessitate some education in home safety, as well.

Furthermore, so many youngsters in their "teens" are doing this work that instruction must also be directed towards their protection, too. Parents of these children should be made aware of the danger of letting their youngsters return late at night unescorted, of sitting for families outside the parents' circle of acquaintance, and of going into unfamiliar neighborhoods. Parents should be made to realize, too, that their children's health is endangered when they are kept up night after night beyond normal bedtime, and that their studies will also suffer.

Couples requiring the services of a sitter must be told of the need, before they leave for an evening, to give *full* instructions to their sitters—whether the sitters are in their teens or older. A common complaint among sitters is that parents fly out the door with no more than a brief phrase to the effect that they'll be at the Joneses, and will be home about midnight. The sitter is left to her own devices in a strange house, with no knowledge of what the children's nighttime routine is, where to find the items she may use in caring for the children, or what to do in case of an emergency.

This packet complements, rather than duplicates, the Auxiliary's current GEM's program. County Auxiliaries may obtain additional information by writing to the State Community Service or Safety chairman or writing direct to the Woman's Auxiliary to the AMA, 535 North Dearborn Street, Chicago, Illinois 60610, for the Sitter Safety Packet. The price is $1.25, and your check should accompany the order.

The Packet contains pertinent and comprehensive information such as: suggestions for establishing the project; information regarding home injuries; toys and play equipment; unauthorized play spaces; planning guides and program suggestions; and numerous other helpful guides. Any county Auxiliary interested in this project should secure this Packet, for it will be a valuable aid in planning.

Thank You, Sincerely

We wish to thank our Board members and county publicity chairmen for their fine cooperation and their contributions to our WOMAN'S AUXILIARY NEWS. Our goal has been to keep the news as current and informative as possible, and to have each issue provide county Auxiliaries with helpful and new ideas on various projects and programs. Your continued cooperation will be appreciated.

We also urge you to use the National Auxiliary's BULLETIN as a handbook and working guide. The vital information therein—doctors' wives at work in the community, the latest news on legislation, and other health related features—speaks of the medical profession's concern for the community and the world. It is our link with other doctors' wives.

MRS. J. F. THROCKMORTON, *Editor*
MRS. J. G. THOMSEN, *Associate Editor*

A One-Woman Task Force

The Auxiliary's District VIII Councilor, Mrs. James F. Bishop, is a formidable "one-woman task force" in defeating Medicare. Not only is she an effective speaker on the Eldercare Program and has supervised the distribution of over 500 Eldercare pamphlets, but she is writing a personal reply to each individual, whose letters praising the Administration's Medicare Plan have appeared in the "Letter to the Editor" column of her local (Davenport) newspaper.

Let's Help WASAMA

The national money-making project of WASAMA (Woman's Auxiliary to the Student American Medical Association) is the sale of printed address labels. You are probably familiar with this type of thing, but these are especially *nice* labels.

From the national organization, local WASAMA chapters receive a commission of ten cents on each dollar order. In this way, they assist their national group while augmenting their own chapter treasury.

As an expression of our desire for continued cooperation with the Iowa Chapter of WASAMA, we shall take orders for these attractive and useful labels at our annual meeting.

Two of the more than 1,100 students from other countries of the world in Des Moines, February 13 and 14, for Foreign Student Weekend are shown above at lunch with Des Moines doctors and their wives. Getting acquainted with the foreign students are Dr. and Mrs. Daniel W. Coughlan, left, and Mrs. Noble Irving, right.

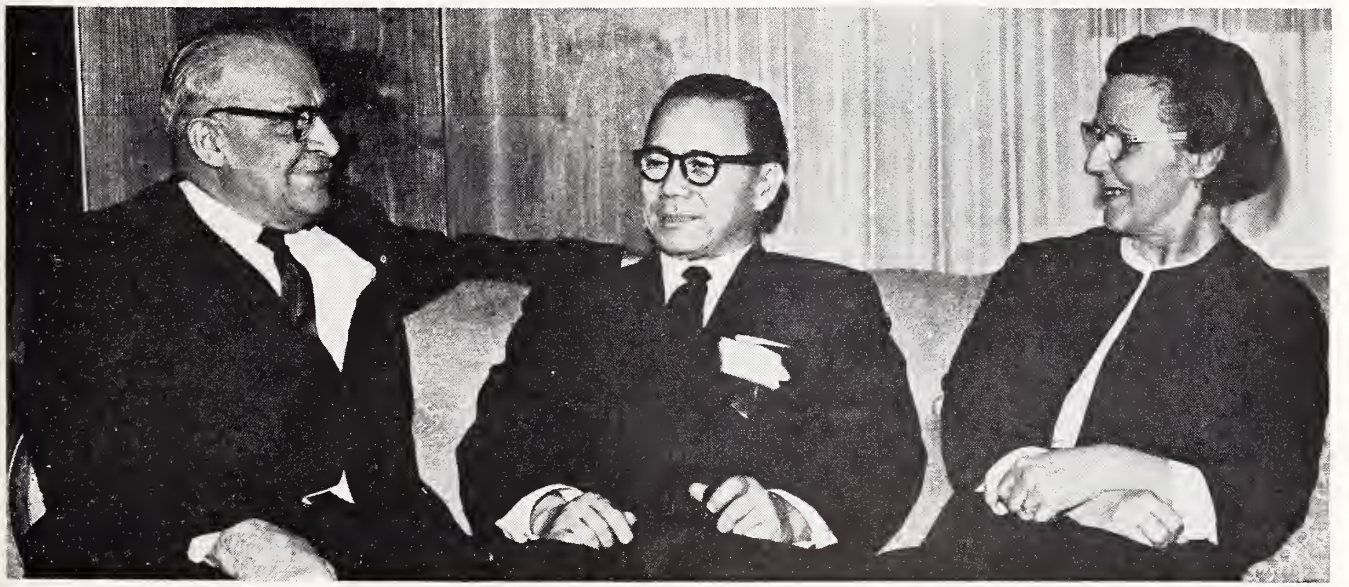
Foreign Student Luncheon

Des Moines was the scene of the exciting and colorful Foreign Student Weekend on February 13 and 14 of this year. The Polk County Medical Society and its Auxiliary hosted their 12th annual luncheon for foreign students engaged in the study of medicine or its allied fields.

Mrs. Elinor Robson, now coordinator of the Board of International Education, was the prime mover in 1953, when this annual weekend of activities had its start. In the beginning, physicians and their wives entertained the students at dinner in their homes, but as the number of people involved became larger, the Board of International Education altered the format, and now the luncheon is held in downtown Des Moines, at the Hotel Kirkwood.

There were 37 students who made reservations for the medical luncheon, and many of those attending wore colorful clothing representative of their respective countries. Many doctors and their families continue to have students as guests in their homes for the weekend, and these arrangements are made through their individual churches.

In this year, 1965, the Auxiliary members had



Guest in the home of Dr. and Mrs. Dwight C. Wirtz during the annual Foreign Student Weekend in Des Moines, February 13 and 14, was Mr. Generoso Provido, the Philippines consul general in Chicago, Illinois. A number of foreign government officials were in Des Moines with the students to take part in the weekend.

Dr. Howard G. Ellis, left, and Dr. Paul From, both Des Moines physicians, visit with foreign student guests at a luncheon given by the Woman's Auxiliary of the Polk County Medical Society. The luncheon has become an annual event of the Foreign Student Weekend which is sponsored by the Iowa Board of International Education. Students interested in careers in the health field are invited.

MRS. ELLIS HONORED—Mrs. Howard G. Ellis, of Des Moines, president of the Woman's Auxiliary to the Iowa Medical Society, was recognized for her distinguished service by members of the Polk County Medical Society at their annual meeting early this year. Mrs. Ellis is shown above receiving from Dr. Noble Irving, immediate past president of the Polk County Medical Society, a framed letter of commendation, which read in part, for "ability and willingness to give so much time and effort to the cause of medicine." Mrs. Ellis' husband is a surgeon in Des Moines and director of medical education at Mercy Hospital.

the added opportunity of meeting students from many of the newly independent African nations.

Following the luncheon, Dr. Parker Hughes, president of the Polk County Medical Society, spoke a few words of welcome, and each student gave his name, country and field of study.

MRS. EDWARD J. HERTKO, *Chairman*
Foreign Student Weekend

News From Around the Hawkeye State

Black Hawk County

The Waterloo Dental Auxiliary entertained the Black Hawk County Medical Auxiliary at a Valentine Brunch at Holiday Inn, Cedar Falls, on February 10. A joint meeting of these two groups has become an annual event that is looked forward to by all members.

Buchanan County Fund Raising

The Woman's Auxiliary to the Buchanan County Medical Society held a fund-raising benefit card party on November 7, 1964. Door and card prizes donated by local merchants were presented, and a lunch was prepared and served by the Auxiliary members. One hundred eighty tickets were sold, and the Auxiliary added $150 to its treasury from the project.

Our members donated time and money to our Special Education classes. The money donation purchased Thanksgiving and Christmas dinners for the children. Auxiliary members help with woodworking, knitting, handicraft and home economics instruction for these children.

We again gave the members of our county home a Christmas party. Entertainment, individual gifts and refreshments were furnished.

The Health Careers Clubs, which we first sponsored in our local high schools last year, are gaining in membership and enthusiasm. Auxiliary members helped furnish transportation for a field trip that the members took to St. Luke's Hospital, in Cedar Rapids, and they continue to help whenever their help is requested.

We participated in the work of World Medical Relief, Inc. Our members collected and packed 24 cartons of drugs, instruments and medical supplies which weighed over 500 pounds. The physicians and dentists in our county, our local hospital and the Mental Health Institute were contacted, and each donated to this project. The response was most generous.

The Buchanan County Auxiliary and the Buchanan Medical Society met together for dinner, in January, at the Hotel Pinicon. Following their business sessions, a film entitled "The Toy Makers" was shown.

MRS. P. H. TENNEY

Dallas-Guthrie Counties

The Dallas-Guthrie Medical Society and its Auxiliary met together for dinner for their January meetings. Following dinner, each group held a separate session.

Mrs. C. A. Nicoll, of Panora, the president, presided at the Auxiliary business meeting. Mrs. C. R. Osborn, of Dexter, reported on the group's participation in the International Health project. Twenty-two "Johnny Coats" had been made and contributed to the overseas needy hospitals.

Des Moines County

The Burlington Medical Auxiliary sponsored the February parties of Senior Citizens, Inc., at the Union Hotel Center, with Mrs. Leo F. Wallace as Auxiliary hostess for one, and Mrs. F. H. Coulson and Mrs. W. C. Friday hostesses for a second party. The programs included group singing directed by the Auxiliary hostesses.

Assisting with the meetings and parties for Burlington Senior Citizens, Inc. has been a Des Moines County Auxiliary project for several years.

Dubuque County

The Dubuque Auxiliary held its annual Mardi Gras Ball the latter part of February, at the Julien Motor Inn, Dubuque.

Masks were a must, and the costumes to be worn were kept a well-guarded secret. All attending the ball were required to wear masks, and those arriving unmasked were asked to secure them at the door.

This year's ball had the theme, "Dubuque Mardi Gras Goes to the New York Fair." We are hoping to hear more about the prize-winning costumes.

Proceeds from the Ball are used for scholarships for Dubuque County girls at schools of nursing at St. Joseph Mercy Hospital and Finley Hospital in Dubuque. Eighteen nurses' scholarships have been awarded by the Auxiliary in the past 11 years. Three recipients are currently in nurse's training at these two hospitals.

Mahaska County

The Mahaska Medical Auxiliary held its February meeting at the Downing Hotel, in Oskaloosa. Mrs. L. J. Grahek presided.

Newly elected officers who assumed their duties in March are: president, Mrs. Ellis Duncan, Fremont; vice-president, Mrs. Keith Campbell; secretary, Mrs. N. L. Saxton; and treasurer, Mrs. Sidney Smith (the latter all from Oskaloosa). Committees for the coming year were appointed.

One of this Auxiliary's projects which is continuing on schedule is the supplying of pies for the Mahaska Hospital's snack bar.

Marion County

The regular meeting of the Marion County Medical Auxiliary was held January 26, at the Maple

Buffet. Mrs. Harold Madsen served as hostess.

Mrs. Yme Sloterdyk, president, conducted the business meeting. Sixteen Johnny Coats had been made by members of the Auxiliary for shipment abroad. Fourteen members were present, and one new member, Mrs. Clarence Denser, was introduced. Dr. Denser is a member of the V. A. Hospital staff.

Plans were formulated for assisting with the immunization program at the Knoxville Community Schools. On February 12 Auxiliary members assisted the school nurse in giving Sabin vaccine, triple shots and boosters to some 500 children. Two more clinics will be held, one in March and the last in April, and Auxiliary members will participate.

MRS. THOMAS D. CLARK

Palo Alto Auxiliary—"Small But Mighty"

Our Palo Alto County Auxiliary, in northwestern Iowa, is rather small. We boast of only eight members. However, we feel we have done a few things that are worthy of mention.

We cooperated with the Hospital Auxiliary in sponsoring crippled children's clinics, cardiac clinic, and the polio vaccine program, and we took an active part in planning our county's new hospital, which is nearing completion.

Two doctors and their wives gave junior-college scholarships. One doctor and his wife housed a student from Italy. The members took part in P.T.A. legislation. The Auxiliary is very proud of the Allied Services Club that it started, in cooperation with the county nurses. This club now has a membership of about 40. Each spring our Auxiliary sponsors a tea for members and their mothers.

MRS. HENRY POWERS

Polk County

At the home of Mrs. Lawrence O. Ely, early in March, Mrs. William Pugh, a physician's wife from Louisville, Kentucky, was honored at a coffee by Board Members of the Woman's Auxiliary to the Polk County Medical Society. Her play, "The Confetti Ball," was winner of the Playhouse's annual Program of Playwrights contest, and was the March production at the Des Moines Community Playhouse.

The Woman's Auxiliary to the Polk County Medical Society held its annual spring tea and pinning ceremony on the afternoon of Friday, March 12, in the Nurses Auditorium at Iowa Lutheran Hospital.

Mrs. Herbert C. Merillat presented the Community Health Service Award to Mrs. Verne Schroeder, of 680-56th Street, Des Moines. This award is given annually to a volunteer laywoman for her interest and work in the health activities of the community. Mrs. Schroeder, who has served two terms as president of the Raymond Blank Hospital Guild, has been active in the Guild since 1953 and is currently its corresponding secretary. She also has served the community through her work with the United Campaign, and as a member of the Polk County Heart Association. She was chairman of Heart Sunday in 1962.

Eighty-nine high school student members of the Health Careers Clubs, sponsored by the Auxiliary, were honored guests at the meeting. They received gold pins in recognition of their participation in the clubs' work. In addition to attending regular club meetings throughout the school year, the students have donated a minimum of one hour per week of volunteer work. Schools participating in the Health Careers Clubs in Polk County this year are Ankeny, East, Lincoln, North, Roosevelt, Saydel, Tech, Urbandale and Valley. Mrs. George Zaharis is chairman of the Health Careers Clubs, and Mrs. Robert Reed is co-chairman.

Cakes and punch were served, followed by tours of the new Iowa Lutheran Hospital Nurses' Home, with student nurses serving as guides. Serving as hostesses were Mesdames Robert Anderson, Lawrence Gray, Hanley Jenkins, George Caudill, James Stiles, and Edward Posner, Jr.

Pottawattamie County

Members of the Pottawattamie County Medical Auxiliary held their second annual benefit card party on March 17 at Club 64, Council Bluffs. Proceeds will be donated to the Pottawattamie County Mental Health Clinic.

Mrs. Lloyd Smith and Mrs. Ralph Moe were co-chairmen for the salad luncheon and card party, which was open to the public.

One feature of the afternoon was a showing of spring fashions, modeled by 18 members of the Auxiliary.

Woodbury County

Newly elected officers of the Sioux Med-Dames are: president, Mrs. Howard Rudersdorf; vice-president, Mrs. J. L. Wiedemeier; treasurer, Mrs. A. W. Horst; and secretary, Mrs. Leonard Boggs.

The wives of physicians attending the Sioux Valley Medical Association meeting, recently, were entertained at a luncheon by the Sioux Med-Dames.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. H. G. Ellis, 5504 Shriver Avenue, Des Moines 50312

President-Elect—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

Recording Secretary—Mrs. M. E. Olsen, Minden 51553

Corresponding Secretary—Mrs. C. W. Latchem, 942 56th Street, Des Moines 50312

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Throckmorton, 1201 64th Street, Des Moines 50311

Associate Editor—Mrs. J. G. Thomsen, 207 Glenview Drive, Des Moines 50312

JOURNAL

of The

IOWA MEDICAL SOCIETY

U.C. MEDICAL CENTER LIBRARY
MAY 10 1965
San Francisco 94122

IN THIS ISSUE:

- The Social Characteristics of 100 Alcoholic Patients—Page 235
- The Neurologic Complications of Diabetes Mellitus—Page 239
- Large Aneurysm of Internal Carotid Artery Simulating an Eosinophilic Adenoma—Page 246
- Vestibular Caloric Testing and Cupulometry—Page 249
- The Atypical Depressive Illnesses—Page 253
- U. of I. College of Medicine Clinical Pathologic Conference—Page 260

MAY, 1965

Silver Maple
(Acer saccharinum)

Distress for Allergic Patients

Kapseals®

Benadryl®

(diphenhydramine hydrochloride)

PARKE-DAVIS

To Combat Symptoms of Tree-Pollen Allergy

This time-tested agent provides two actions that effectively combat symptoms of seasonal allergy: *Antihistaminic*—relieves sneezing, nasal congestion, itching, and lacrimation. *Antispasmodic*—relieves bronchial and gastrointestinal spasm. **Precautions:** Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this product. Hypnotics, sedatives, or tranquilizers, if used with BENADRYL, should be prescribed with caution because of possible additive effect. Diphenhydramine has an atropine-like action which should be considered when prescribing BENADRYL. **Side Effects:** Side reactions, commonly associated with antihistaminic therapy and generally mild, may affect the nervous, gastrointestinal, and cardiovascular systems. Most frequent reactions are drowsiness, dizziness, dryness of the mouth, nausea, and nervousness. BENADRYL is available in several forms including Kapseals containing 50 mg.

The pink capsule with the white band is a trademark of Parke, Davis & Company. 72465

PARKE-DAVIS

PARKE, DAVIS & COMPANY, Detroit Michigan 48232

IN THE TREATMENT OF SELECTED CASES OF PREMATURE LABOR

AND THREATENED

AND HABITUAL ABORTION

Lutrexin®

H.W.&D. BRAND OF LUTUTRIN

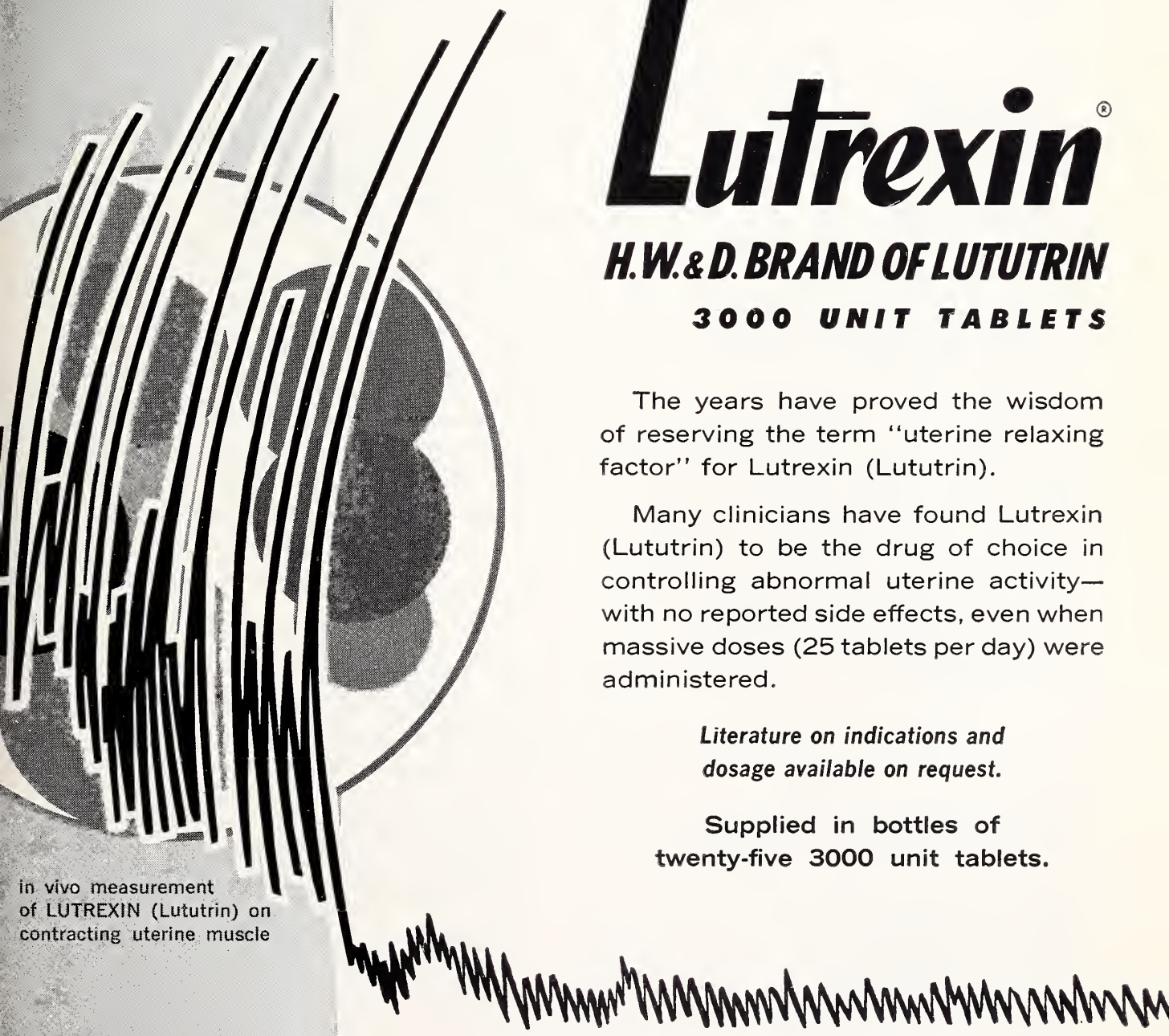
3000 UNIT TABLETS

The years have proved the wisdom of reserving the term "uterine relaxing factor" for Lutrexin (Lututrin).

Many clinicians have found Lutrexin (Lututrin) to be the drug of choice in controlling abnormal uterine activity—with no reported side effects, even when massive doses (25 tablets per day) were administered.

Literature on indications and dosage available on request.

Supplied in bottles of twenty-five 3000 unit tablets.



in vivo measurement of LUTREXIN (Lututrin) on contracting uterine muscle

HYNSON, WESTCOTT & DUNNING, INC.

(LTR21)

BALTIMORE, MARYLAND 21201

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV MAY, 1965 No. 5

CONTENTS

The Social Characteristics of 100 Alcoholic Patients
John Clancy, M.D., and Richard Vornbrock, ACSW 235

SCIENTIFIC ARTICLES

The Neurologic Complications of Diabetes Mellitus: A Symposium
M. W. VanAllen, M.D., R. W. Fincham, M.D., and D. B. Stone, M.B. 239

Large Aneurysm of Internal Carotid Artery Simulating an Eosinophilic Adenoma
Kazem Fathie, M.D. 246

Vestibular Caloric Testing and Cupulometry
Bosko Milojevic, M.D., Sc.M.D. 249

The Atypical Depressive Illnesses
Garfield Tourney, M.D., Peter G. S. Beckett, M.D., and Jacques S. Gottlieb, M.D. . . . 253

U. of I. College of Medicine
Clinical Pathologic Conference 260

EDITORIALS

Nonunion of Fractures 269

Pregnancy in the Diabetic Patient 269

A Theory About the Endemic Character of Chickenpox 271

Tracheotomy 272

SPECIAL DEPARTMENTS

President's Page 276

Coming Meetings 283

Iowa Chapter of the American Academy of General Practice 284

The Doctor's Business 285

State Department of Health 286

In the Public Interest . . . . . facing page 288

Iowa Association of Medical Assistants 289

Woman's Auxiliary News 291

The Month in Washington xxii

Personals xxv

Deaths xliv

MISCELLANEOUS

New Psychiatric Wing at a Des Moines Hospital 275

18th AMA National Rural Health Conference . . 279

Residency Program in Child Psychiatry in Des Moines 290

AMA-ERF Loan Program for Medical Students . 290

A New Semi-Synthetic Penicillin 290

USPHS Films xxiii

Adverse Drug Reaction Symposium xlvii

Experimental Pneumonia Vaccine xlviii

Statement on Intrauterine Contraceptives . . xlviii

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor . . . . . Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D. . . . . Iowa City
Floyd M. Burgeson, M.D. . . . . Des Moines
Daniel A. Glomset, M.D. . . . . Des Moines
Robert N. Larimer, M.D. . . . . Sioux City
Daniel F. Crowley, M.D. . . . . Des Moines

PUBLICATION COMMITTEE

Cecil W. Seibert, M.D. . . . . Waterloo
John H. Sunderbruch, M.D. . . . . Davenport
Kenneth E. Lister, M.D. . . . . Ottumwa
Richard F. Birge, M.D., Secretary . . . . . Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

The Social Characteristics of 100 Alcoholic Patients

JOHN CLANCY, M.D., and
RICHARD VORNBROCK, ACSW
Iowa City

DRINKING ALCOHOLIC BEVERAGES is traditional in many cultures. Few cultures, however have completely succeeded in preventing the development of alcoholism. Indeed, despite long familiarity with the problem and despite voluminous scientific reports on the subject, we are still trying to unravel the causes of this condition. In our endeavors it is important to determine a set of characteristics by which to identify the *early* alcoholic, and this report is a contribution toward that objective.

This report deals with 100 consecutive patients referred to the Alcoholism Clinic at the State Psychopathic Hospital with a diagnosis of alcoholism. The diagnosis was based, in each instance, on a drinking pattern that consistently interfered with some important aspect of the patient's life, e.g., personal health, family life, occupational status or social adjustment.

SOURCES OF INFORMATION AND METHODS

The study covered the period from January, 1960, to June, 1962, inclusive. The patients were interviewed and examined by a physician, and members of the patients' immediate families were interviewed by a social worker. Except during short vacation periods, the same persons conducted these examinations throughout the period. Obviously, opinions voiced by family members concerning the patient, and *vice versa,* were likely to be prejudiced or distorted, and thus an attempt was made to seek objective information and to quantitate the data whenever possible. Information was gathered with respect to the patient's age, sex, county of residence, referral source, financial status, income, education, occupation, employment status, court status, record of arrests involving alcohol, marital status, number of marriages, family history of alcoholism, prior treatment for alcoholism, hospitalizations for alcoholism, and membership in Alcoholics Anonymous. The information couldn't be verified in all cases, but some data were obtained on all items for every patient.

The sample, including 97 whites, two Negroes and one Indian, comprised 2.9 per cent of the total of outpatients referred to the Psychopathic Hospital during the 30-month period. In 1959, general psychiatric outpatient clinics in the United States had reported that 3 per cent of adults whose cases were terminated had been classified as suffering from addictive alcoholism.[1] Although it is estimated that there are approximately 48,000 alcoholics in the State of Iowa, or 2,690 per 100,000 population, yet only 100 new patients sought treatment at the Psychopathic Hospital clinic in a period covering 2½ years. These figures support Mulford's opinion that few alcoholics are in treatment at any given time.[2]

AGE

Table 1 shows the age groups of patients at time of referral. Almost half of them were 39 years of age or under, and three-fourths were under 50 years. Moore and Ramseur[3] and Selzer and Holloway[4] reported in their studies that excessive drinking persists for a period of 7-10 years before the patient's admission to the hospital. Their figures suggest that the alcoholic is already in trouble during the years when his earning capacity is at its peak and when he has an opportunity to provide for the long-term welfare of his family. By the time he seeks treatment, the illness is likely

TABLE I

AGE DISTRIBUTION OF PATIENTS IN THE STUDY GROUP

Age	Number of Patients
0-19	2
20-29	14
30-39	32
40-49	26
50-59	24
60-69	2
	100

Dr. Clancy is an associate professor of psychiatry at the U. of I. College of Medicine, and Mr. Vornbrock is chief of social service at the State Psychopathic Hospital, in Iowa City.

to be well-established and tending toward chronicity. The paucity of patients over 60 years of age is interesting. It isn't likely that the disease has been arrested before the patients reach that age. Rather, it is probable that some patients die prematurely, and that those who have survived have chronic alcoholism, suffer physical complications, and need inpatient care in general hospitals or mental health institutes. Thus, their needs can no longer be met in an outpatient facility.

SEX RATIO

In this sample, there were 93 males and just eight females, for a ratio of 11 or 12 to one. The generally accepted ratio is five or six to one, but it must be remembered that the patients in this study had been referred for treatment, and that these figures don't indicate the prevalence of alcoholism in the general population. However the figures do suggest that female alcoholics are less likely to come to treatment.

The woman alcoholic has more opportunity to drink in secret and to hide her symptoms from all but the members of her family. Alcoholism is still regarded as a disgrace by many people, and it can be expected that a husband will endeavor to protect his wife from public censure. The husband's drinking pattern must also be taken into account. Two of the female patients in the study group had alcoholic husbands, and four were married to heavy social drinkers. In no instance did the husband regard his own drinking as having any great importance in his wife's problem, but it can be assumed that some of the husbands may have needed to protect their own drinking patterns by denying that they had had any involvement in their wives' difficulty.

COUNTY OF RESIDENCE

The medical center at Iowa City receives referrals from all parts of the state, and it isn't surprising to find 37 counties represented in the sample. Johnson County, of which Iowa City is the county seat, far exceeded all others, with 28 referrals. Next in order were the more populous counties—Linn, Polk, Scott, Muscatine and Lee. This pattern is a usual one, for rates of alcoholism are ordinarily higher in urban as compared to rural areas. A problem which arose in connection with nearly all patients from rural areas was that of finding an institution, group or individual to help with a long-term treatment program. Were it not for the local physician and the nearest AA branch, many of these patients would have had to deal with their problems entirely on their own, and in quite a number of instances even these supports were lacking.

SOURCE OF REFERRAL

Table 2 shows that 34 of the patients were referred by physicians in private practice. An additional 25 had been referred to the clinic by other departments in the University Hospitals—mainly from the Departments of Internal Medicine and Neurology. Many of the latter had, in turn, been referred to those departments by physicians in private practice. A few additional ones had come from the U. of I. Student Health Service. In all, two-thirds of the referrals had been made by physicians, and that fact may reflect an increased acceptance of alcoholism as an illness on the part of the medical profession. A surprisingly small number came from any other single source.

TABLE 2

INDIVIDUALS OR AGENCIES THAT REFERRED THE PATIENTS

Source of Referral	Number of Patients
Self-Referred	12
Private Physician	34
University Hospitals	25
Student Health Service	7
Employers	7
Relatives	2
Court	4
Social Agency	9
	100

Few patients could be classed as entirely voluntary. The majority had come at the suggestion of family members, physician or employer, and in many instances a degree of coercion such as a threat of loss of employment, divorce, etc. was evident. Such patients often took a non-committal or "fence-sitting" attitude, and made statements such as "My wife believes I have a problem with alcohol, and that I need help." The physician's willingness to deal with this attitude is essential. It may mean that the patient denies that there is a problem, but his reason for that denial should be sought before one concludes that he isn't motivated to take treatment. Dealing successfully with imperfect motivation is a part of treatment, and unless imperfect motivation is accepted, there will be very few patients in treatment.

FINANCIAL STATUS AND INCOME

On their first visit to the clinic, 31 patients were classed as private; 19 as part-pay; and 50 as state patients. A number of the private patients who continued in treatment had to be reclassified to part-pay or state-patient status. Generally, the patients' financial state was borderline, but very few were homeless or penniless. The patient's role as head-of-household or breadwinner, very often, had long since devolved upon his wife. Husband and wife often had tried to live their lives in relative isolation from each other, but nonetheless there had been frequent arguments on matters having to do with finances, authority and welfare of children. The emotional relationship nearly always was an ambivalent one. Together with sex,

disagreement over finances was the most frequently used vehicle for the expression of this ambivalence. Table 3 presents the range and levels of income for the group.

TABLE 3

INCOME LEVELS OF PATIENTS IN THE STUDY GROUP

Annual Income	Number of Patients
$ 0- 999	20
$ 1,000-1,999	4
$ 2,000-4,999	33
$ 5,000-6,999	22
$ 7,000-9,999	10
$10,000+	10
Unknown	1
	100

EDUCATION AND OCCUPATIONS

Table 4 shows the educational levels of the group, and it is at once apparent that educational status makes little difference to an individual's status as a drinker. Approximately one-third of the patients had reached the 10th grade level; another one-third had completed or nearly completed high school; and the remainder had either attended or graduated from college. Even though drinking patterns and drinking customs tend to vary between one socioeconomic group and another, each group seems to have its proportion of alcoholics. Table 5 lists patients by occupation. Sixty-five reported that they had been continuously employed during the preceding year; 29 had worked irregularly; and six had been unemployed. Fifty-one patients had what they termed "a steady job," by which they usually meant that they had been employed in their present capacities for a number of years. High rates of absenteeism and reduced efficiency in work are well known consequences of excessive drinking among employed alcoholics. Nevertheless, most patients in the sample were employed, and that fact suggests either that the alcoholic covers his absences well or that his colleagues protect him.

TABLE 4

EDUCATIONAL ATTAINMENTS OF PATIENTS IN THE STUDY GROUP

Education	Number of Patients
None	0
Grade 1- 4	1
Grade 5- 8	21
Grade 9-10	13
Grade 11-12	36
College 1-3 years	11
College Graduation	18
	100

TABLE 5

OCCUPATIONS OF PATIENTS IN THE STUDY GROUP

Occupation	Number of Patients
None	5
Laborer—no training	20
Skilled laborer—manual skills	43
Lower white collar—routine clerical work	5
Upper white collar—responsible and administrative	5
Professional or executive	12
Student	4
Housewife	6
	100

COURT STATUS AND ARRESTS

Four patients had been referred directly by the courts for examination, and one patient had come at the suggestion of his lawyer. In each case, the behavior which led to court charges had been directly related to excessive drinking. Table 6 shows that at some time in the course of their drinking history, over 50 per cent of the patients had become involved with the law. Nearly 30 per cent had had more than one arrest, and the common charges had been disturbing the peace or operating a motor vehicle while intoxicated. It seems that many people who drink are likely to be charged once with O.M.V.I., but that only the alcoholic or potential alcoholic is likely to be charged with that offense a second or a third time.

TABLE 6

PATIENTS' TROUBLE WITH THE LAW

No. of Arrests Involving Alcohol	Number of Patients
None	49
1	22
2	15
3	6
4	2
5	3
6	0
7	1
8	2
	100

MARITAL STATUS

At the time of examination, 67 patients were married and living with their spouses; seven were separated; nine were divorced; four were widowers or widows; and 13 had never married. Fifteen pa-

tients had been married twice, and five had married thrice. Even though the divorce and separation rates for problem drinkers are significantly higher than those for the general population, the majority of patients in this sample were still living with their wives, and 20 of them reported having had more than one marriage.

FAMILY HISTORY OF ALCOHOLISM

When the same definition of alcoholism was applied to the patients' family members as to the patients themselves, it seemed likely that nine patients came from families in which both parents and some siblings suffered from alcoholism. Sixteen patients had alcoholic fathers, and 15 patients reported having an alcoholic brother. A total of 40 patients had alcoholic relatives. These figures agree with those in most studies reporting alcoholism in the family backgrounds of alcoholic patients.

PREVIOUS TREATMENT FOR ALCOHOLISM

Forty-two patients reported that they had had no medical treatment for alcoholism whatsoever before attending the clinic; 13 had been treated at a mental health clinic, usually at the request of the family physician; and 45 had been treated by the family physician. Table 7 lists the hospitalizations per patient.

TABLE 7

PATIENTS' PREVIOUS HOSPITAL ADMISSIONS FOR ALCOHOLISM

No. of Hospital Admissions for Alcoholism	Number of Patients
None	46
1	29
2	11
3	8
4	3
5	2
6	0
7	0
8	1
	100

Only 46 patients had *not* been hospitalized, and as mentioned above, 42 patients reported having had no treatment of any kind. Thus it would seem that by the time a patient seeks medical aid, he is in need of hospitalization. Alcoholism is well established as a disease for which hospitalization is necessary.

Thirty-one patients had made contact with an AA group, but nearly all of the contacts had been brief. Often they had been made at a time when the drinker was under some degree of pressure to do something about his drinking. Motivation in such circumstances is usually rather short lived, and it isn't surprising to find that only one patient had kept any continuous or regular contact with AA. Sixty-nine patients had made no contact with AA. Some of these had given thought to AA, but had rejected the idea that they were in need of AA help. Others said that AA wasn't suited to their needs. In some cases those statements were rationalizations indicating some vague awareness of the problem but at the same time an unwillingness to deal with it in a realistic manner.

DISCUSSION

It must be emphasized that this group comprised alcoholics who attended a treatment clinic with a distinct psychiatric orientation. Not every alcoholic seeks treatment, much less psychiatric treatment. These factors always make for some degree of selection in the patient population. In addition, some of the patients had come at the insistence of family, employer or other agency—a circumstance which casts doubt on their motivation for treatment.

Even with these limitations, some general observations are worth noting. The "skid row" alcoholic, traditionally regarded as being without home, family or income, frequently in jail and in poor health, constitutes but a small fraction of the group.

Almost half of the patients in this group had established alcoholism before reaching 40 years of age, and this might indicate over-indulgence in alcohol from early adult life. The critical period immediately preceding the appearance of a pathologic drinking problem is likely to occur earlier than most doctors may realize.

Fifty-four patients had had one or more hospitalizations for alcoholism before attending the clinic, but 42 patients reported having had no treatment whatsoever. It would appear that by the time the alcoholic seeks treatment, his condition is such that he is likely to need hospital care.

Half of the group had had one or more arrests for offenses directly related to drinking. It seems that the alcoholic comes to the attention of the courts just as readily as he comes under the attention of a physician.

In contrast with the numbers who had been arrested and/or hospitalized, only six of the patients were unemployed. Sixty-five had been regularly employed during the previous year, and this might indicate that the alcoholic is usually well protected in his job. This is a rather dubious favor for his fellow workers to confer upon him, for it may also "protect" him from doing something about his illness. A minority of the patients were in unskilled occupations. Many were highly skilled, and couldn't be replaced readily by their employers. Neither education nor income offered much immunity against alcoholism; the illness appears at all levels.

Highly important is a family history of alcoholism. Forty patients had either an alcoholic parent or an alcoholic sibling.

(Continued on page xxiii)

Scientific Articles

The Neurologic Complications Of Diabetes Mellitus

A Symposium

Maurice W. VanAllen, M.D.: I shall start the discussion of the commonest of the neurologic complications of diabetes—polyneuritis—with a few general remarks.

We see many cases of polyneuritis at University Hospitals, Iowa City, and I am sure you see such cases in your practices. Not only are there many such clinical syndromes, but many of them are due to diabetes. Thus we are discussing a condition that has a high incidence. Let us review the symptoms of polyneuritis. The commonest—particularly in diabetics—is parasthesia, experienced as burning, tingling and numbness, especially in the feet. The hands are affected less commonly, and only in the more severe cases. Pain is quite common. Sometimes it is distributed in the areas of parasthesias, but it may be diffuse through the lower extremities, and it may be a deep, aching pain, often worse at night. As an associated phenomenon, the patient will complain of cramping in the legs, and easy fatiguability in walking.

What are the classical findings of polyneuritis? It is beside the point, for the moment, to discuss whether the site of pathology is in the roots or in the peripheral nerves, or just where it is in the peripheral nerves. In the polyneuritic syndrome, the sensory symptoms and findings are peripheral, and have a glove-and-stocking distribution. One needs a pin to determine the commonly-found pain loss, and to compare distal with more proximal areas. Not always will the patient report a diminution of sensation, although he usually will. He may actually report a heightened sensation, and your conversation with him may bring out the fact that the abnormal sensation is associated with a tingling and a diffuse spread of pain when he is stimulated distally. This, in itself, is evidence of loss of innervation.

Areflexia in the lower extremities is quite common, and the physician who deals with diabetics is well acquainted with it. Diabetics commonly lose their ankle jerks much earlier than the average person, and the knee jerks as well. Weakness and atrophy will be found in the more severe cases, and these may progress to the point of complete disability. It is useful to note the loss of autonomic function peripherally—particularly an absence of sweating. Early in peripheral neuropathies, one may occasionally find excessive sweating, but as the condition advances the feet become dry, making one wonder, sometimes, just why one should do a sympathectomy for vascular insufficiency.

Another common finding in diabetic and other peripheral neuropathies—and a bit of a puzzle, sometimes, in differential diagnosis—is an elevation in spinal-fluid protein.

Now, the degree of severity, in peripheral neuropathies generally, and in diabetic peripheral neuropathy, may be mild, so that the condition is simply a nuisance. Or it may be severe, completely incapacitating and irreversible.

DIFFERENTIAL DIAGNOSIS

The patient with symptoms suggesting peripheral neuropathy may present a serious problem in differential diagnosis. One of the commonest problems in differential diagnosis is that of determining whether the numbness, areflexia and

weakness in the lower extremities are manifestations of some disease of the spinal cord. Ordinarily the finding of hyperreflexia in the lower extremities, or a Babinski sign, leads us to the diagnosis of a myelopathy. But when the cauda equina is compressed, as perhaps by herniated disc or a tumor in this region, the patient can then have paresthesias, dysesthesias, pain, areflexia, weakness and atrophy, for indeed the sites of pathosis are relatively comparable. When the patient also has an elevated spinal-fluid protein, a real diagnostic problem may be created, and it often can't be solved except by myelography. A classical problem in differential diagnosis is tabes dorsalis, a condition that we don't see very often any more. Here again, sensory loss, areflexia and weakness in the lower extremities are common symptoms. Tabetics don't have squeeze-tenderness of muscles, however, so this is a way for us to differentiate the two rather easily. In either diabetic neuropathy or tabes dorsalis, the pupils may react poorly to light.

Perhaps one of the most important points in differential diagnosis relates to the effects of vascular disease *per se* on the extremities and their nerves, as opposed to the effects of peripheral neuropathy alone, and indeed in diabetes the two conditions commonly coexist. The pain and the cramping may be due largely to occlusive vascular disease. These syndromes—particularly when one considers surgery of the major vessels of the abdomen—are important to differentiate. In other words, one must distinguish which of the symptoms are due to vascular insufficiency, and which are due to neuropathy.

When we have established the diagnosis of polyneuritis, we then are concerned about the cause. Not infrequently we have difficulty in establishing it. Alcoholism is a common cause of polyneuritis, as we see it here at University Hospitals, and some nutritional disorders—starvation, poor diet, absorptive difficulties—are another common cause. Toxic polyneuritis from medications such as streptomycin, the sulfas, INH and some others is occasionally seen. The Guillain-Barré syndrome may be difficult to evaluate, particularly when it appears in a diabetic, and the possibility of an acute onset of diabetic neuropathy must be considered. The carcinomatous neuropathies, which have been recognized in recent years, add a further problem in establishing an etiology, as do the collagen vascular diseases. One could prepare a long list, but to do so wouldn't be pertinent to our discussion.

The diabetic neuropathies—and I think Dr. Stone will give you a little larger view of this aspect of the problem—start relatively early, but commonly are manifest and come to the physician's attention in middle-aged or older patients. The distribution between the sexes is about equal. The character of the neuropathy is essentially that which I have described. The first symptoms are painful paresthesias in the lower extremities. They may seem to come on acutely after an infection or injury, or they may be slow and insidious in their onset.

Although we may be uncertain as to the etiology of the neuropathy, we commonly look to diabetes, for it is the most frequent cause. Thus, our tendency is to attribute a polyneuropathy to diabetes when we discover some disturbance in carbohydrate metabolism in the patient. Of course we aren't always correct, or entirely correct, in so doing.

Dr. Fincham has been especially interested in the methods of electrodiagnosis, as they assist us in establishing the presence of polyneuropathy, and especially when it is by no means obvious clinically. I'd like to ask him to tell us how those methods can be used.

ELECTRODIAGNOSIS

Richard W. Fincham, M.D.: I think it is fair to say that the diagnosis of a polyneuropathy is basically established in terms of the clinical history and the physical findings. There may be a very few instances when there is some uncertainty or some equivocation, and in those instances electrical tests can be of help. In addition, once in a while one may wish to document the presence of a polyneuritis quantitatively, and the electrodiagnostic tests can help one in doing so. Both motor and sensory nerve-conduction tests are of value, but I believe that the motor testing can be done more conveniently, and that it gives adequate information.

In general, we can check two nerves in the upper extremity, the median and ulnar nerves. In the lower extremities, we can get at the posterior tibial and the common peroneal nerves. These provide a fair sampling of the peripheral nerves.

The normal conduction velocities for the upper extremities run about 55 meters per second $\pm$ 4 meters per second. Now when there is a polyneuropathy present, whether due to diabetes or to some other cause, the nerve-conduction velocities will be slow, and the values will be less than 46 meters per second.

I should like to show two slides, and outline briefly what is done. Figure 1 shows the type of testing that is done in motor-conduction velocity determinations. Let's assume that this nerve represents the median nerve. We stimulate the nerve, with surface electrodes, as close to the nerves as possible, and record the end result by means of surface electrodes placed over the muscle. For the median nerve, the muscle that we use as the end point of our measurement is the thenar muscle group. We stimulate the nerve at two places. Stimulus site No. 2 is over the wrist in the region of the transverse carpal ligament, and site No. 1 would be at the antecubital fossa medial to the

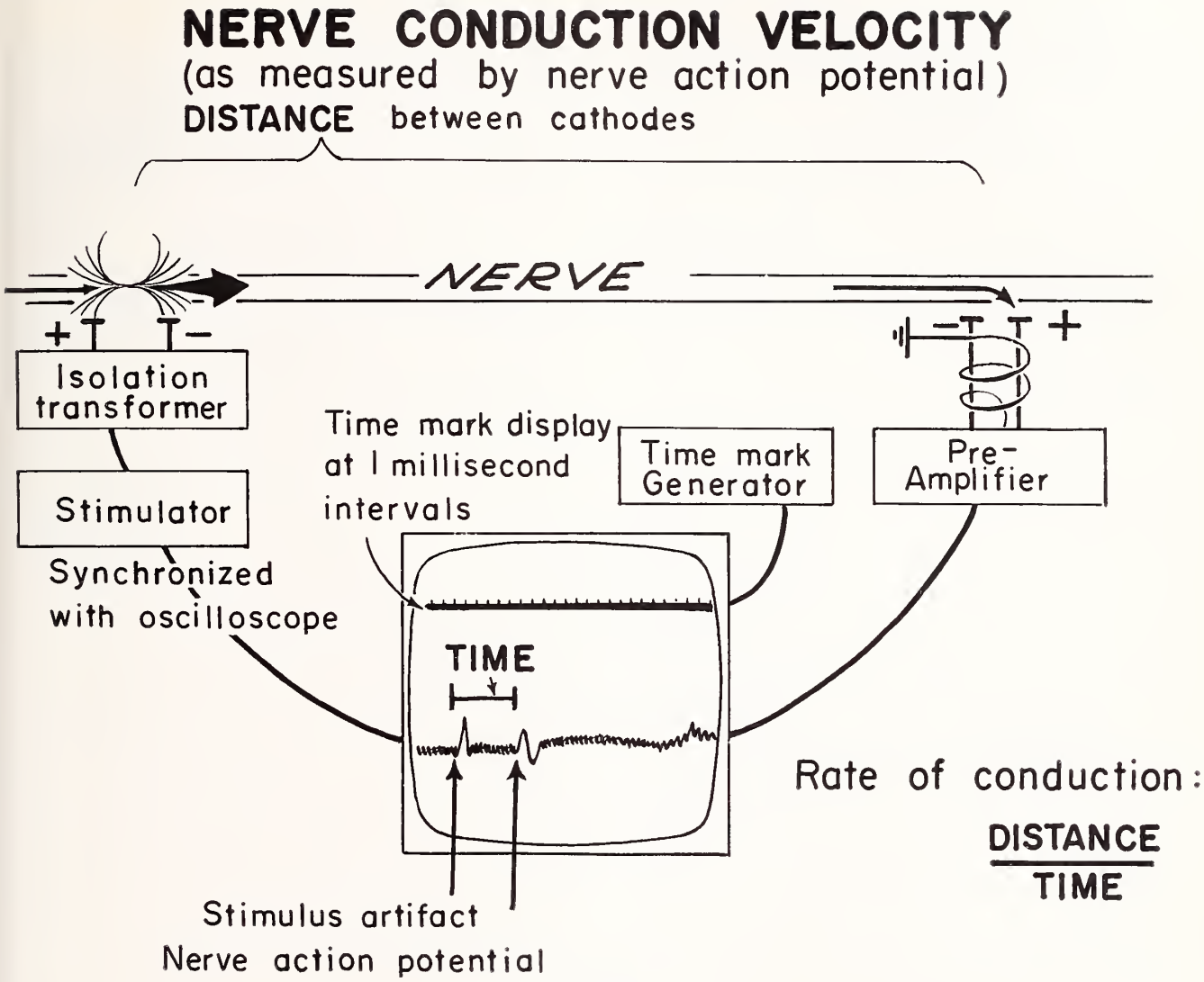


Figure 1

bicipital tendon. A shock is administered, a shock artifact is visible, and a short time later the muscle response is recorded from these electrodes. We have an interval of time, here, which we can compare with another interval marker that is also on the oscilloscope screen, and we thus are able to find out the time interval that has elapsed between the shock artifact and the onset of the muscle response.

The second stimulus site, as might be expected, produces a longer time interval because of the greater distance of nerve transmission required. We are interested in the nerve-conduction velocity. We want to avoid the synaptic delay and the error that it would induce. So this is why we use two stimulus sites. When we subtract one time interval from the other, we are left with the time it takes for a stimulus to travel between the two stimulus sites. Then we measure the distance between the two stimulus sites on the skin with a centimeter ruler, and thus finding the distance and time, we are able to calculate the speed of nerve conduction. In a patient with diabetic neuropathy or some other kind of neuropathy, the speed is less than in a healthy individual.

Now let's look at Figure 2. It shows a similar type of test, but represents a nerve conduction velocity determination. Let's say that this is a median nerve, and that we are testing the sensory action potentials. From our motor conduction studies we have found where the median nerve traverses the wrist, and we are able to place our recording electrodes in that vicinity. We stimulate the second and third digits with ring electrodes. We again get our shock artifact, and this time we record a nerve-action potential, rather than a muscle-action potential, as the end point. Then we measure the distance, as before; we calculate the time interval; and we make velocity determinations. In sensory potentials, we not only are interested in a slowing of the nerve-conduction velocity, but are interested in the height of the nerve-action potential. This is considerably diminished and is sometimes entirely absent in polyneuropathies.

An interesting comparison was made, several

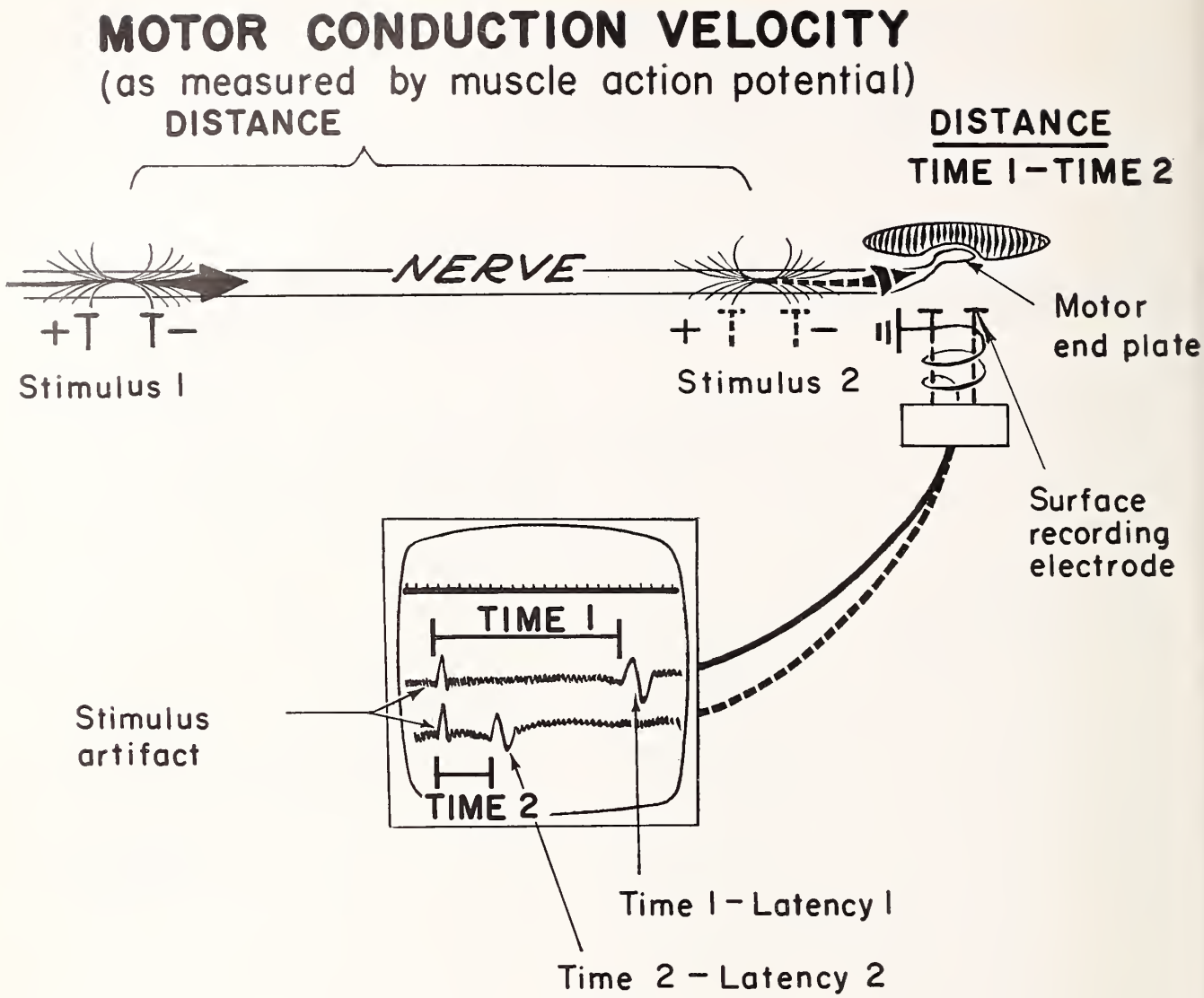


Figure 2

years ago, between diabetic patients and controls, and it was found that normally, in sensory-nerve conduction studies, there is a progressive slowing after the age of 35. Diabetics with polyneuropathy showed this slowing to a marked degree, and diabetics without evidence of polyneuropathy were also shown to have an unusual slowing by nerve-action potential measurements. This finding suggests that there may be some changes within the nerve prior to the onset of clinical symptomatology.

This, then, has been a brief review of two laboratory tests that may help document the presence of a polyneuritis.

Dr. Van Allen: Will you tell us the normal range, once again, and what one can expect to find, let's say, in a mild diabetic neuropathy?

Dr. Fincham: For a motor-conduction velocity test such as I talked about in terms of the median nerve, the lower normal values would be around 48 or 49 meters per second, the normals being about 55 meters per second. The sensory-conduction velocity would probably show a very marked diminution in amplitude of potential, and a slowing.

One thing I didn't mention. One might suspect that nerve-action potentials might be some kind of index as regards success of treatment, but they haven't proved to be so. Clinically, a patient may make some decided improvements, despite a persistent slowing of his nerve-conduction velocities.

DIABETES AND "DIABETIC NEUROPATHY"

Dr. Van Allen: Dr. Fincham has just alluded to the fact that some patients with subclinical diabetes have a slowing of nerve conduction. I had already suggested that we sometimes have considerable difficulty in establishing the cause of a peripheral neuropathy, and are inclined to assign it to diabetes, even when the classical symptoms of that disorder are not present, if we can show some difficulty in carbohydrate metabolism.

So now I'm going to turn to Dr. Stone with some particular sticky problems in this regard.

When does diabetes start? What is the relationship between neuritis and what some of us call the "pre-diabetic state"? And I'm sure the audience would like to have the benefit of your experience, Dr. Stone, as to the relationship of neuritis to the severity and duration of diabetes, as to what can be accomplished through control of diabetes, and finally as to what we can do about diabetic neuritis.

Daniel B. Stone, M.B.: Your question about the relationship between neuropathy and the duration and control of diabetes bears on a central problem that confronts us—whether the clinical troubles that beset diabetic patients are part of the natural history of the disease, or whether they are complications. Are they inescapable, or are they preventable? A number of observations shed light on the relationship between diabetes mellitus and diabetic neuropathy, and I shall discuss them seriatim.

One observation concerns the time of onset of neuropathy. Occasionally the clinical manifestations of neuropathy may begin soon after a patient has been recognized to have diabetes mellitus; sometimes the clinical manifestations of neuropathy may lead to the recognition of diabetes mellitus; and, rarely, the clinical manifestations of "diabetic" neuropathy may be recognized before a person displays any evidence of having diabetes itself. Most people now accept the concept that there are four "stages" of diabetes mellitus. The first stage is "pre-diabetes." Pre-diabetes is a condition that exists before a person develops any evidence of carbohydrate abnormality; it exists from the time of conception to the occurrence of the first abnormal glucose-tolerance test. Just as before one is born he is prenatal, before he is diabetic he is pre-diabetic. The "condition" of pre-diabetes cannot be detected by any of the usual laboratory tests.

The second stage of diabetes mellitus is latent diabetes. During this stage, a person has a normal glucose-tolerance but may have an abnormal cortisone glucose-tolerance test—or may show evidence of impaired carbohydrate tolerance under situations of stress. The third stage is chemical diabetes. During this stage the patient has an abnormal glucose-tolerance test, but has none of the usual clinical manifestations of diabetes mellitus. The fourth stage is clinical diabetes, a disorder which is easily recognized.

What is the relationship between the onset of neuropathy and the onset of diabetes mellitus? There is increasing evidence that neuropathy may sometimes begin before the onset of either chemical or clinical diabetes. There is evidence that neurologic damage may occur in people with pre-diabetes. A few individuals with pre-diabetes have been shown to have delayed or prolonged nerve-conduction times. People with pre-diabetes may even develop the clinical manifestations of neuropathy, although it is impossible to prove that there is a cause-and-effect relationship between pre-diabetes and the development of neurologic changes.

You might think that observations of this kind shed light on the fundamental clinical problem of diabetes—whether the clinical troubles that occur in diabetic patients are part of the natural history of diabetes mellitus, or whether they are complications. You might think that the recognition of the onset of neurologic changes during the pre-diabetic stage or during the stage of latent diabetes is consistent with the hypothesis that the neurologic complications of diabetes are an integral part of diabetes mellitus, and are not "complications" of the disease.

Another series of observations also sheds some light on this fundamental question. These are observations about neuropathy developing *after* a patient has been recognized to have diabetes mellitus. Is there a correlation between the time of onset or between the severity of neurologic damage, on the one hand, and the duration of metabolic regulation or the severity of diabetes mellitus, on the other? The evidence is somewhat surprising. Most investigators have concluded that there is *no* positive correlation between the severity of neurologic damage and the duration of diabetes, between the severity of diabetic neuropathy and the quality of metabolic regulation or control of diabetes, or between the severity of neuropathy and the "severity" of diabetes, as measured by the patient's insulin requirements. Most of the evidence, for instance, suggests that a person aged 35, having had poorly controlled, insulin-dependent, juvenile-type diabetes mellitus for 20 years, is *not* more likely to develop severe diabetic neuropathy than is a person of 68 years who has apparently had diabetes for only a few months and who does not need insulin.

Observations of this second kind—that there is no positive correlation between the extent of neurologic damage and the duration of control or the "severity" of diabetes—are also consistent with the hypothesis that neuropathy is a part of diabetes and is not a "complication" of the disease. Both these observations are consistent with the view that diabetic neuropathy is not caused by the hyperglycemia which accompanies diabetes mellitus.

I suggest that there may be several fallacies in these inferences, or at least that thinking along these lines is based on several premises which have been insufficiently examined. One fallacy is the concept of diabetes mellitus as a disease of carbohydrate metabolism. It is obvious that diabetes is a disease in which there are upsets of carbohydrate metabolism, and by definition, impairment of carbohydrate metabolism is an integral part of clinical diabetes mellitus. It is possible, however, that the emphasis on the carbohy-

drate changes in diabetes simply reflects the fact that it has always been easier to measure the amount of sugar in the urine than to recognize other biochemical changes.

It is conceivable that diabetes is not, fundamentally, a disorder of carbohydrate metabolism or a disease that results from a lack of insulin. A number of pieces of evidence are consistent with this concept. One observation, for instance, is that patients with pre-diabetes have elevated levels of insulin-like activity in the blood. Other series of observations have led, for another example, to the concept of a glucose-fatty acid cycle. The hypothesis of a glucose-fatty acid cycle includes the suggestion that an increased rate of release of free fatty acids from adipose tissue may impair the uptake of glucose by muscle. This mechanism itself could cause hyperglycemia. Observations of this kind tend to undermine one's confidence in the old concept that diabetes is primarily a disease of carbohydrate metabolism caused by a lack of insulin. If some of these new concepts can be verified, they will add to the confusion about the relationship between diabetic neuropathy and diabetes mellitus. Although it seems to be established, for instance, that there is no positive correlation between the severity of neuropathy and the "severity" or the quality of control of diabetes mellitus, it is conceivable that we should judge the "severity" and quality of control of diabetes, not by reference to changes in carbohydrate, but by reference to the concentration of plasma free fatty acids, or even the rate of lipolysis of adipose tissue.

I suggest that a second fallacy in the tentative conclusion that the evidence suggests that diabetic neuropathy is an integral part of diabetes, rather than a complication of it, is the semantic error of thinking that the word is the same as the thing. Are we correct in thinking of diabetic neuropathy as a single condition? It is conceivable that the term *diabetic neuropathy* covers many different disorders. My view is that the clinical evidence gives us reason for supposing that what we call diabetic neuropathy *does* include several different diseases. There is the neuropathy which comes on after many years of diabetes, and which is often accompanied by signs of arteriolar sclerosis and atherosclerosis. There is the neuropathy which sometimes occurs early in the course of diabetes mellitus, after a period of extremely poor metabolic regulation, and sometimes after diabetic acidosis. There is the rare type of diabetic neuropathy which comes on soon after we have established excellent metabolic regulation in a diabetic patient who has previously been very poorly controlled. My view is that the natural history of these various manifestations suggests that they represent different types of diabetic neuropathy.

In short, I think that there is no positive correlation between the time of onset and severity of neuropathy, and the duration, metabolic regulation or severity of diabetes. But I think we can't now draw any logical inferences about the relevance of these observations to the cause of neuropathy itself.

THERAPY

Dr. Van Allen: Is there something you can add in regard to the management of the polyneuritic patient, Dr. Stone?

Dr. Stone: There is no specific therapy for diabetic neuropathy. A number of investigators have asserted that various treatments help patients who have this trouble, but it is extraordinarily difficult to conduct well-controlled clinical trials of therapy in this condition. There is no evidence that any of the vitamins, including vitamin B_{12}, are of any value.

My own view is that it is reasonable to aim for the objectives of a normal concentration of blood sugar and normal concentrations of serum lipids. Personally, I usually use insulin, rather than the oral hypoglycemic drugs, in the treatment of patients with severe diabetic neuropathy. I can't assert a jot of evidence that insulin is better than the oral hypoglycemic agents, although I have the clinical impression that it is desirable to use insulin. I strive extremely hard to achieve normal levels of serum lipids, and by normal levels I mean levels which would be considered normal for the Japanese population, and not the higher levels which might be considered normal in the United States and Western Europe. Once again, I have no evidence that treatment of this kind helps patients with diabetic neuropathy. At this time, here at Iowa City, we are conducting a long-term study of patients with this disorder.

Some patients with diabetic neuropathy seem to recover spontaneously; some patients seem to respond to the treatment they receive. Many patients with severely painful neuropathy (associated, sometimes, with atrophy) undergo a remarkable improvement after three to 18 months. A diabetic patient with a neurogenic bladder may be relieved by the resection of the internal vesicle sphincter, if he doesn't improve with time and good diabetic care. Patients with "diabetic diarrhea" sometimes respond to the broad-spectrum antibiotics. Patients with Charcot joints, and those with neuropathic ulcers, may be helped by orthopedic devices or by local surgery. Postural hypotension often responds to salt-retaining adrenocortical hormones.

In short, no specific therapy is known. My own plans of therapy include the use of insulin and diet, with the objective of achieving a normoglycemia and normolipidemia. Local, specific measures often make these patients more comfortable, or relieve some of their problems.

AUTONOMIC SYNDROMES

Dr. Van Allen: We have several other subjects under this heading. Closely allied to the somatic

polyneuritis, which we have discussed, are some very troublesome symptoms that relate to afflictions of the autonomic nervous system. Not only are ordinary peripheral nerves affected, but apparently the autonomics are, as well. At least we so interpret the symptoms that result.

Dr. Fincham, would you mind reviewing a few of these, and telling us what some of these syndromes are?

Dr. Fincham: There are quite a variety of autonomic syndromes associated with diabetic polyneuritis, and what I propose to do is simply to review a number of them with you. Nocturnal diarrhea is not an uncommon finding. It is sometimes associated with fecal incontinence, and with the steatorrhea syndrome and with malabsorption. This is felt to relate to autonomic impairment. In addition, studies have shown a delayed gastric emptying.

The urinary bladder is frequently affected. Two general types of neurogenic bladders can be regarded as common. There is the sensory or atonic bladder. In this condition there is a large residual urine, and the implications of infection that accompany it. Very often the detrussor muscle is affected in this situation, and urologic consultation is necessary if the exact nature of the difficulty is to be established. Sometimes resection of the vesicle neck is all that is needed. At other times, various types of drainage procedures are required. Another type of neurogenic bladder that may be involved is the spastic, uninhibited bladder, a consequence, perhaps, of a cerebral infarct or spinal-cord ischemia. In such a case there isn't a large residual urine. Rather, there is a spastic bladder presenting primarily with urge incontinence. Treatment with anti-cholinergic drugs may control the incontinence. Again, I think urologic consultation is needed to establish whether or not there is residual urine, and to make the decision about the type of treatment that is necessary.

Impotence is a very common associated finding in cases of diabetic polyneuritis. This has been attributed to vasomotor impairment. Along with this, problems of orthostatic hypotension have been noted, also related to the vasomotor impairment. Dr. Van Allen has already described a number of trophic changes—the changes in sweating, trophic ulcers involving the feet, and Charcot joints. In diabetics, these phenomena seem a bit unique in their distribution. Instead of involving proximal joints, the ankle and the metatarsal bones are frequently involved in diabetic Charcot joints.

A rather uncommon but certainly very spectacular syndrome is that of diabetic pseudo-tabes, in which Argyll-Robertson pupils may be found, the typical posterior-column degenerative changes with impairment in pallesthesia, two-point discrimination impairment, and ataxia. Perhaps even nighttime lightning pains and gastric crises may occur. These are not nearly so common as the other situations, however.

These, then, are some of the autonomic dysfunctions that can accompany diabetic polyneuritis.

I wonder whether Dr. Stone would comment on his management of nocturnal diarrhea and the malabsorption syndrome.

Dr. Stone: In 1957, Malins and French described the treatment of diabetic diarrhea with broad-spectrum antibiotics. These investigators had used chlortetracycline. At that time we were studying a patient who had extremely severe diabetic diarrhea. He was a man of 36 who had had episodes of diarrhea for several years. Each episode occurred for five or six nights, and was followed by relief for one or two weeks. The diarrhea usually started at six or seven o'clock in the evening and continued all night. It was often accompanied by fecal incontinence. We had tried many things in an attempt to control the condition, but had never been successful. After reading the report of Malins and French, we tried one dose of a broad-spectrum antibiotic, given about half an hour after the onset of diarrhea. To our surprise, this treatment seemed to be completely effective. We were—and have continued—unable to understand how a single dose of a broad-spectrum antibiotic could stop so-called diabetic diarrhea, especially since the diarrhea usually ceases within about an hour after the patient has swallowed the capsule.

In 1958, we commenced a double-blind study of the treatment of diabetic diarrhea with broad-spectrum antibiotics, but we haven't yet broken the code, and I can't tell you the result. However, we have used small doses of broad-spectrum antibiotics in a few patients who were unable to enter that double-blind study. In four out of six such patients, the treatment has been effective.

It appears that it is extremely rare for diabetic diarrhea to be associated with the malabsorption syndrome. These patients usually respond to corticosteroids.

Dr. Van Allen: Is there any correlation between what we might like to think of as autonomic neuropathies, if indeed they are, and the peripheral neuropathies we were talking about earlier? Do they coexist? Is there any relationship between them?

Dr. Stone: In our clinical experience here, it has been uncommon to find a patient with autonomic diabetic neuropathy who has no evidence of neuropathy elsewhere, and excessively uncommon to find a patient with *severe* autonomic neuropathy who has no evidence of peripheral neuropathy. We haven't, for instance, found a patient with severe diabetic diarrhea who hasn't had clinical manifestations of peripheral neuropathy. We haven't found a patient with severe orthostatic hypotension who hasn't lost his reflexes, and had decreased vibration sense and other evidences of peripheral neuropathy.

In short, our clinical experience seems to indi-

cate that severe autonomic neuropathy is usually accompanied by evidence of moderate peripheral neuropathy. We frequently see patients in whom the evidence of autonomic neuropathy seems more startling than the signs of peripheral neuropathy. Conversely, however, we frequently see patients with severe peripheral neuropathy who present few signs of autonomic neuropathy. In general, I think that there is some loose relationship between the autonomic neuropathies and the peripheral neuropathies of diabetes. This relationship does not appear to be strong. In some instances, the clinical picture is dominated by trouble from autonomic neuropathy; in other instances, the patients' complaints are mainly of troubles from peripheral neuropathy.

One of the difficulties in making observations of the relationships between these two kinds of diabetic neuropathy is the impossibility, at the present time, of measuring autonomic neuropathy as objectively as one can measure nerve-conduction time in peripheral diabetic neuropathy.

Large Aneurysm of Internal Carotid Artery Simulating an Eosinophilic Adenoma

KAZEM FATHIE, M.D.
Cedar Rapids

THE PATIENT WHOSE CASE I shall describe had a large aneurysmal tumor of the internal carotid artery. It had ruptured, and the patient had been treated previously for acromegaly. I am reporting it because of the very interesting nature of the disease, and also because I want to point out the advisability of arteriography in cases of acromegaly, and especially in ones associated with unilateral third-nerve palsy.

CASE REPORT

A 53-year-old white female was first seen in 1955 at Grady Memorial Hospital, Atlanta, Georgia, because of a long history of renal calculi, with slightly elevated serum calcium and 24-hour calcium excretion, a normal phosphorus and a non-toxic nodular left-thyroid gland. She underwent a left hemithyroidectomy on October 24, 1955, and an exploration for parathyroid adenoma was negative.

An intravenous pyelogram demonstrated a stone in the region of the right kidney, and suggested the presence of a stone on the left.

An endocrinologic study in July, 1958, revealed an elevation in calcium and a decrease in PO_4. X-rays of the skull at that time showed the sella turcica in the upper limits of normal, and a squaring of the head and metacarpals suggesting acromegaly. They measured 13 to 14 mm. in AP diameter, and 6 to 7 mm. in depth. The patient then noticed enlargements of her head, face, hands and feet, and she was unable to wear her wedding ring at all by August 7, 1958.

She was followed in the general clinic until April 10, 1961, but repeated skull x-rays showed no changes in the pituitary fossa. At the same time she complained of blurring of vision in the left eye, and diplopia. When she removed her glasses, she developed ptosis of the left upper eyelid within a short time, and upon awakening from deep sleep, she had dilation of the left pupil accompanied by pain in the left eye. Her visual fields were normal. She came to the Emergency Room twice complaining of pain behind the left eye, and on April 24, 1961, she was given a complete work-up. Her blood pressure was 185/110 mm. Hg, her pulse rate was 72/min., her respirations were 18/min., increases were noticed in the sizes of her hands and feet, and she was admitted for tests to rule out acromegaly.

On her admission, May 8, 1961, repeated visual-field tests were normal, and the significant laboratory work included a PO_4 of 3.4 mg. per cent, a calcium of 10.1 mg. per cent, a creatinine of 44 (urine), a repeat calcium of 12 mg. per cent, and a cerebrospinal fluid protein of 41 mg. per cent and a normal opening pressure.

On May 27, 1961, pneumoencephalography was performed, and the findings were consistent with a pituitary mass and clinical acromegaly. A V.D.R.L. was negative, and the cerebrospinal fluid was normal. Endocrinologic and neurologic work-ups again supported acromegaly and possible adenoma of the pituitary gland. Eye and visual-field examinations were again normal. On June 9, 1961, she was discharged with a left third-nerve paralysis but a normal electrocardiogram. She was followed

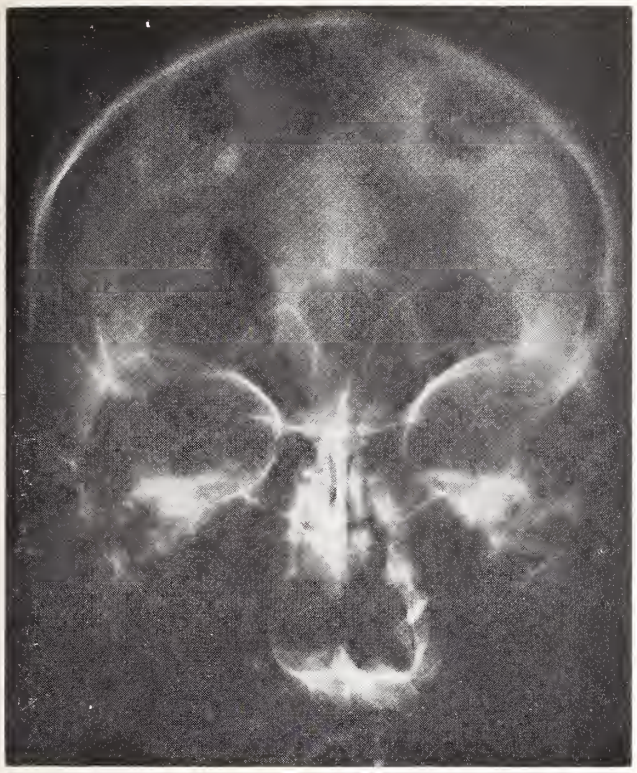


Figure 1. Ventriculography: Only the right ventricle has filled, and the massive displacement of the right lateral ventricles as well as the third ventricle is noticeable. The left ventricle has collapsed from the pressure of the basilar hematoma as well as of the large aneurysmal sac on the left side.

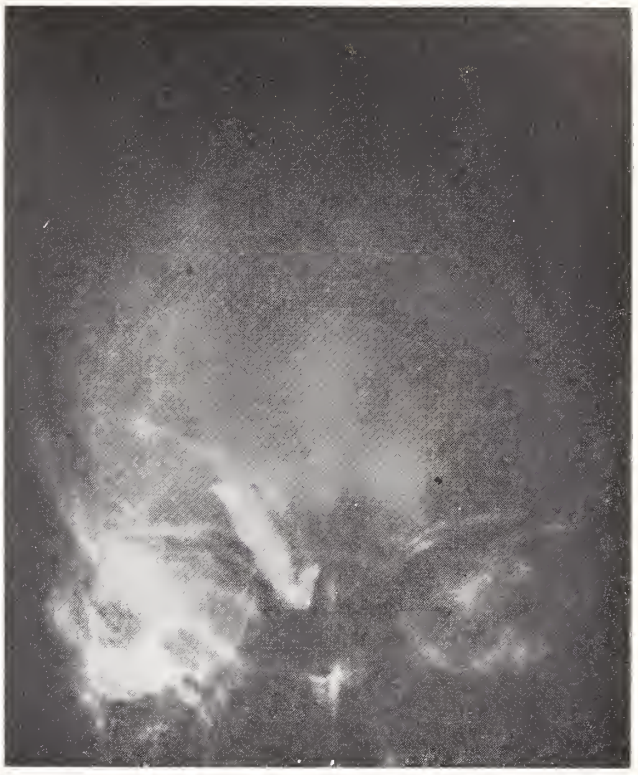


Figure 2. Angiogram, anteroposterior view: Partial filling of the aneurysmal sac in the internal carotid artery and the spasm proximal and distal to the artery can be seen. Note the difference in size of the internal carotid artery and the lumen of the aneurysm.

in Endocrine Clinic. The patient had noticed an increase in the size of her hands and feet for the first time in 1930, after the birth of her first child. At that time her shoe size increased from 8 to 10. There were no menstrual irregularities.

For the first time, on February 11, 1963, the patient was seen by the Department of Neurosurgery, and a neurologic examination revealed paralyses of the left third, fourth, fifth, sixth, seventh and twelfth nerves, plus ipsilateral hemiparesis and a history of headache. She suddenly became unconscious and unresponsive. A tracheostomy was performed, and neurologically she had a slight stiffness of the neck. Her reflexes were exaggerated, and she had a Babinski sign bilaterally. The left pupil remained dilated, but the fundus was normal. A lumbar puncture revealed normal findings. The opening pressure and the color were within normal limits.

It was felt that the patient had bled into the adenomatous tumor, but that bleeding couldn't account for all of her symptoms. So she was observed until February 18, 1963, and then bilateral carotid and bilateral vertebral arteriograms were performed. The vertebral arteriogram was completely normal, but the left carotid arteriogram at that time revealed marked spasm and narrowing of the internal arteries just proximal to the cavernous portion. At the level of the posterior communicating arteries, an unusually long saccular vessel was shown to be present. There seemed to be a small aneurysm at the proximal end of that sac, poor filling of the left middle cerebral beyond the level of bifurcation, and no filling of the left anterior cerebral. The large saccular vessel extended posteriorly and towards the temporal lobe. The right carotid arteriogram revealed excellent filling of the middle cerebral artery and both anterior cerebral arteries. The anterior cerebral vessels were displaced toward the right side by about 1.5 cm.

The patient was taken to the operating room the next day, and ventriculography was done. This revealed a marked displacement of the right lateral ventricle and its temporal horn to the right side. In addition, there was a marked displacement of the third ventricle. The nonlocalizing character of the displacement was consistent with the presence of diffuse subdural bleeding, as well as probable local hemorrhage into the temporal horn.

A large left frontoparietal temporal craniotomy was performed. The dura was under pressure and bulging. A small incision was made over the dura, and subdural clots (organized, with no membrane) were proved. Gradually, a massive amount of clotted blood was removed, and the temporal lobe and silvan fissure were pushed up by the

basal clot. A large, pulsating tumor was seen, with a plug of clot sitting in the ruptured area of the aneurysmal sac. At that point, the operation was stopped, and exposure of the common carotid artery, as well as the internal and external carotid arteries in the neck on both sides, was done. We noted that pressure over the common carotid artery and occlusion on the left side stopped the pulsations of the carotid artery intracranially, and pulsations of the intracranial sac. The sac shrank slightly, but when pressure was removed it pulsated again and returned to its former size. It extended posteriorly to the mid portion of the sella turcica, and anteriorly to the cavernous sinus. Because of its huge size, a wrapping of muscle and Gelfoam was applied to it, and the clots were cleaned from its base.

The craniotomy was then closed, a Crutchfield clamp was applied to the left internal carotid artery in the neck, and the patient was transferred to the recovery room. She gradually woke up, spoke, and tolerated the complete ligation of the clamp without incurring hemiparesis, hemiplegia or aphasia. Her state of consciousness returned to the completely normal. Ipsilateral hemiparesis cleared within a week, and gradually cranial nerve XII, then VII and then VI were cleared. The patient became ambulatory, and was discharged on May 2, 1963, with palsy only of the third left and possibly the fourth left nerves.

Figure 4. Angiogram, lateral view: Similar finding, as well as displacement of the siphon.

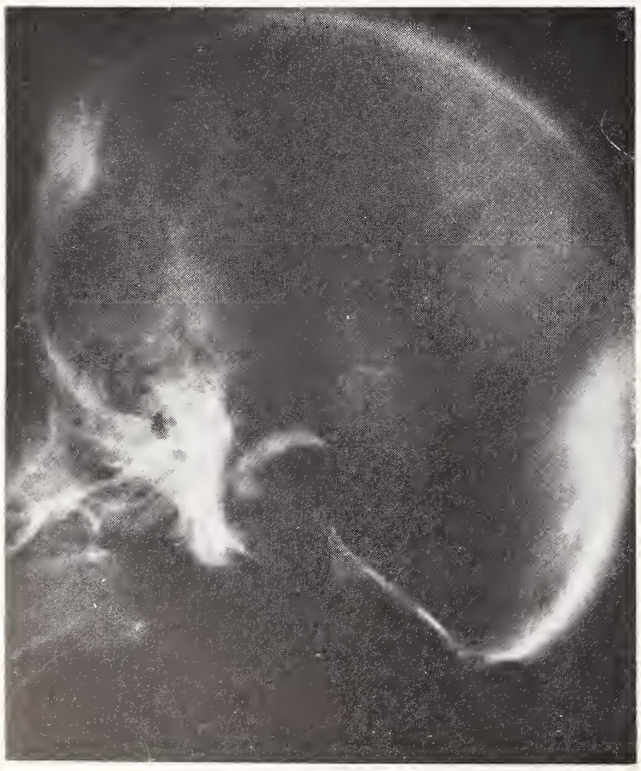


Figure 3. Angiogram, lateral view: Note filling of the lumen of the aneurysmal sac, as well as the sharp cut in the upper part of the sac due to pressure of hematoma.

Figure 5. Angiogram, oblique view: Marked spasm of the internal carotid artery proximal to the aneurysm, as well as faintly indicated filling of the external and internal branches.

DISCUSSION

Although many authors such as J. C. White and W. A. Hamby have reported previously on large intrasellar aneurysms simulating hypophyseal tumors, very few have emphasized their association with acromegaly. In the case I have reviewed, it is noteworthy that after all of the diagnostic procedures for acromegaly it remained for arteriography to reveal a further problem—an aneurysmal tumor or large aneurysmal sac.

I feel that it is superfluous to recount all of the articles that have been written on this subject. From a study of the case presented above, and from a perusal of a few references, the reader can familiarize himself with this type of aneurysmal tumor.

SUMMARY

The purpose of this paper has been to point out the problem of diagnosis in cases of large aneurysms, and to emphasize the necessity of arteriography in cases of acromegaly and cases of suspected intrasellar mass—especially when there is an associated third-nerve palsy or ophthalmoplegia.

Vestibular Caloric Testing and Cupulometry

BOSKO MILOJEVIC, M.D., Sc.M.D.

Iowa City

THE MOST FREQUENTLY USED methods of stimulating the vestibular peripheral system are the rotatory and caloric tests. The caloric test is commonly used in otologic practice, for one can obtain nystagmus to the ipsilateral or contralateral side by stimulating only one ear with warm and cold water.

The cold-warm test devised by Cawthorne, Fitzgerald and Hallpike is the most logical and widely-accepted test of this kind. In that test, the temperature of the water is maintained at 7°C above and 7°C below normal body temperature (30-44°C). The duration of nystagmus is measured with or without Frenzel glasses.

The caloric test is not a physiologic method, however, and the inner ear is not accustomed to such stimulation. In addition, various factors such as blood supply or pneumatization of the temporal bone can influence the conduction of the thermal wave through the bone during the caloric test. "The stronger the stimulus, the stronger the effect"—the basic rule in the physiology of the human body—does not apply in the caloric test. The duration of post-caloric nystagmus is approximately the same following stimulation with either a maximum or a minimum quantity of water. This is the reason why physiologic processes during the caloric stimulation of the peripheral vestibular system cannot be mathematically calculated.

The rotatory test is much older than the caloric test. Purkinje was first to describe the effect of rotation on the human body, in 1820. Barany described rotatory tests in 1906, and introduced them into the clinical neuro-otologic examination of the vestibular system. In 1942, van Egmond, Groen, Hulk and Jongkees investigated cupulometry, which was an improvement on the original Barany rotatory test. They were able to prove that the Barany rotatory test is above the normal threshold, and provokes temporary damage of the hair cells in the semicircular canal. This phenomenon was so obvious that the Barany rotatory test is no longer used by the majority of otolaryngologists. Cupulometry hasn't been accepted either, because of the time it consumes and the very expensive equipment it requires. For these reasons, the caloric test is still used in the majority of cases, despite the fact that rotatory stimulation is much more physiologic than caloric stimulation.

The greatest disadvantage of the rotatory technic is simultaneous stimulation of both labyrinths. Lymphokinesis is ampullofugal in one semicircular canal, and ampullopetal in the other. These sum reciprocally, and provoke nystagmus to one direction. For instance, after cessation of rotation to the right, ampullofugal movement of the endolymph occurs in the right labyrinth, and ampullopetal movement occurs in the left. This causes nystagmus to the left. The difference between the classic Barany method and cupulometry is that in cupulometry the beginning is subliminal (under the physiologic threshold), acceleration is gradual, and the velocity is constant but never higher than 90 degrees per second. The durations of reaction after the different speeds during cupulometry are proportional to the logarithmic values of certain known impulses. On the contrary, the classic Barany test is much above the normal threshold of the peripheral vestibular system, with 180 degrees per second (10 turnings in 20 seconds) where pre-rotatory stimulus is combined with post-rotatory effect.

Dr. Milojevic is a research assistant professor in the Department of Otolaryngology and Maxillofacial Surgery at the University of Iowa. This work was supported by PHS research grant B-2779 from the National Institutes of Neurological Diseases and Blindness.

Obviously, it is almost impossible to eliminate either of the tests, since they are so different from the physiologic and technical points of view. The use of a combination of the two tests, however, can provide much more data, since the two tend to complement one another.

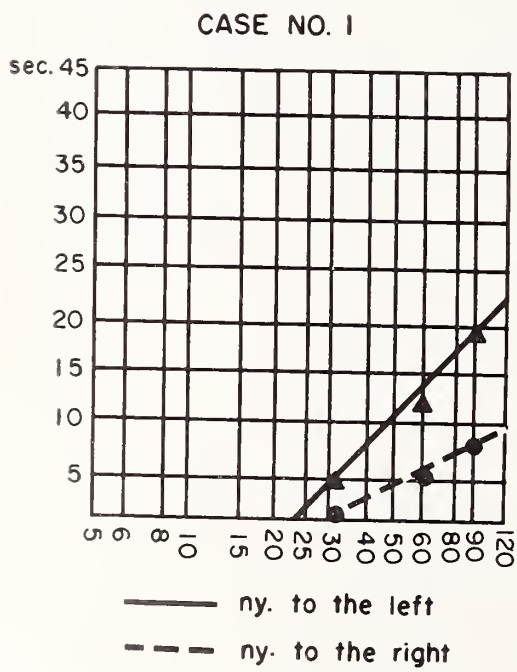
For clinical purposes, it is necessary to perform both tests, especially in those cases where the caloric test shows some abnormality or directional preponderance. However, very few institutions can afford an electronically driven chair for cupulometry, and many authors have suggested using the simplified cupulometry provided by a simple revolving chair driven by an electric motor, which can maintain three different velocities (30, 60 and 90 degrees per second) with a certain acceleration time and a brake for sudden stops. Such a chair can be constructed in any workshop, and can give sufficient data for clinical purposes.

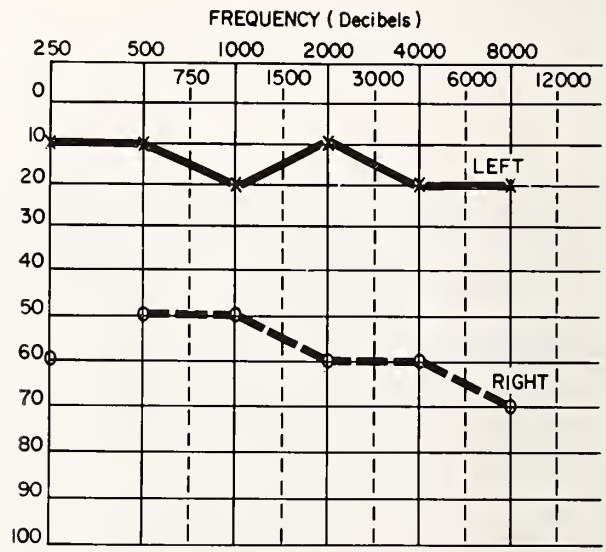
To provide a more sophisticated clinical evaluation and to improve our knowledge of the physiology and pathology of the peripheral and central vestibular system, an electronically driven revolving chair test would be desirable. It would provide different degrees of acceleration and deceleration, ranging between 5 and 120 degrees per second. Nystagmus, amplitude, eye speed and frequency can be registered by electronystagmography.

In an effort to show the importance of a simultaneous use of caloric and rotatory tests, I shall cite some clinical cases.

First Case. A 35-year-old male patient had a history of recurrent attacks of vertigo, with a subjective feeling that objects were moving around him. The first attack had occurred three years earlier, and had been followed by tinnitus and a hearing loss in the right ear. An audiogram showed linear hearing loss at the level of 50 to 70 decibels on the right side. Caloric tests were almost normal, but rotatory tests showed very marked vestibular hypofunction (right-canal paresis). On analysis of the caloric test only, it would have been difficult to draw definitive conclusions, but the simplified cupulometry provided much more data for the paresis of the right semicircular canal (Figure 1).

Second Case. A 61-year-old patient, 15 days before being admitted to the hospital, had suddenly lost his balance, had become unsteady and had sustained a loss of hearing on the left side. Re-





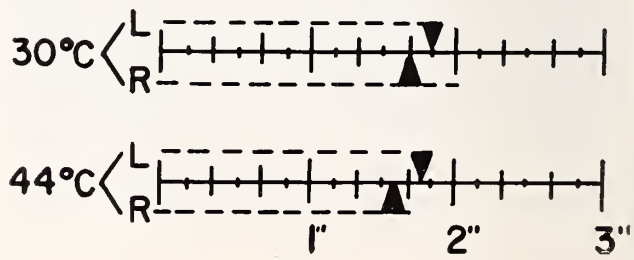


Figure 1

peated otologic tests showed progressive hearing loss of the perceptive type. The Bekesy recruitment test was negative. Ophthalmologic and neurologic investigations showed a high degree of arteriosclerosis, with the Romberg positive to the right. The caloric test showed left-canal paresis, whereas rotatory stimulation produced only symmetrical duration of nystagmus in both directions.

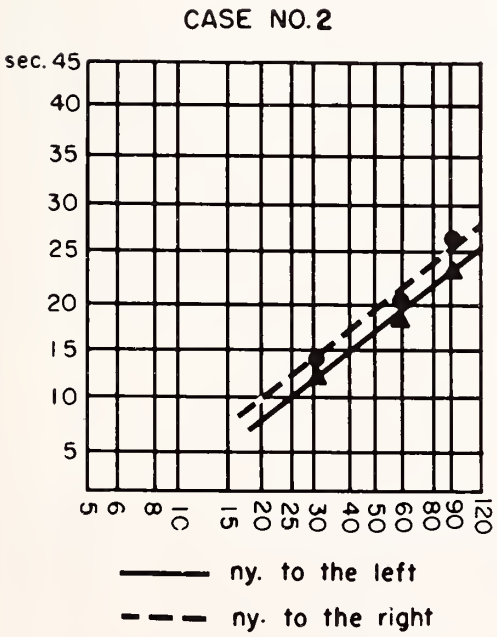
Audiometric and caloric tests suggested a peripheral lesion of the labyrinth. Absence of positive recruitment, together with almost normal cupulometry and the high degree of arteriosclerosis, indicated a central lesion of the vascular region, and further clinical examination actually proved it (Figure 2).

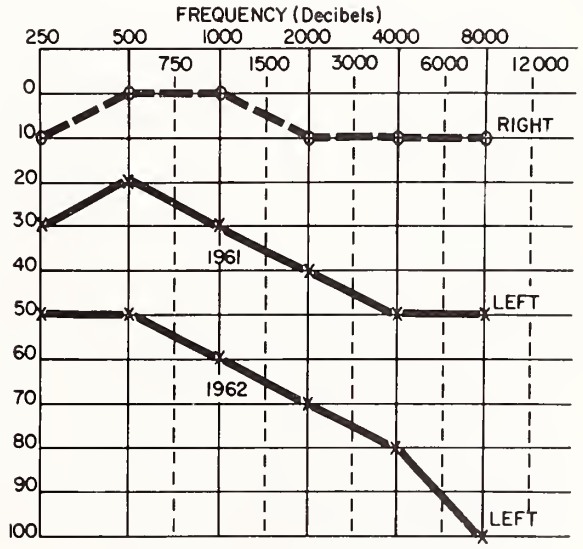
Third Case. A 56-year-old female patient had experienced her first attack of dizziness six months previously. She had had a hearing loss in the left ear, followed by tinnitus, and she complained of vomiting. Later, there was constant unsteadiness. Audiometry showed a left-sided hearing loss, with a positive threshold drift on Bekesy audiometry. A caloric test indicated a marked directional preponderance to the right. Cupulometry confirmed the caloric test and showed a directional preponderance to the right. The diagnosis was acoustic neurinoma of the left side. (The directional preponderance is always toward the opposite side of the brain.) (Figure 3.)

The advantages of two completely different methods of stimulation of the peripheral vestibular system can be seen from these illustrations. Diagnostic values of one test are confirmed or disproved by the other one. In practice, if both the caloric test using a cold-water stimulus and the audiogram appear normal, it is unnecessary to perform stimulation with warm water. However, if any abnormality or discongruence appears, complete caloric and rotatory testing, as well as further neuro-otologic examinations, are required. Directional preponderance found by caloric testing has to be proved by rotatory testing. Completely divergent findings in caloric and rotatory tests are pathognomonic of a central lesion.

SUMMARY

Caloric and rotatory (cupulometry) tests are the most frequently used methods for stimulating the peripheral vestibular system. The caloric test is used extensively, for it offers individual stimulation of the labyrinths. Cupulometry is more physiologic, but has the disadvantage of causing simul-





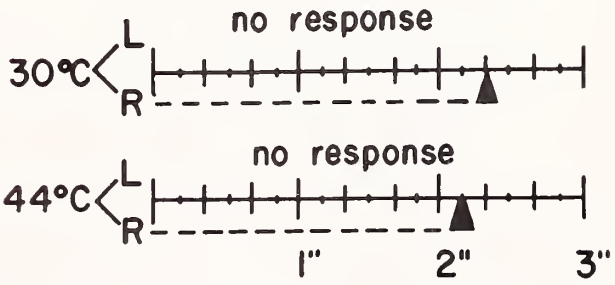


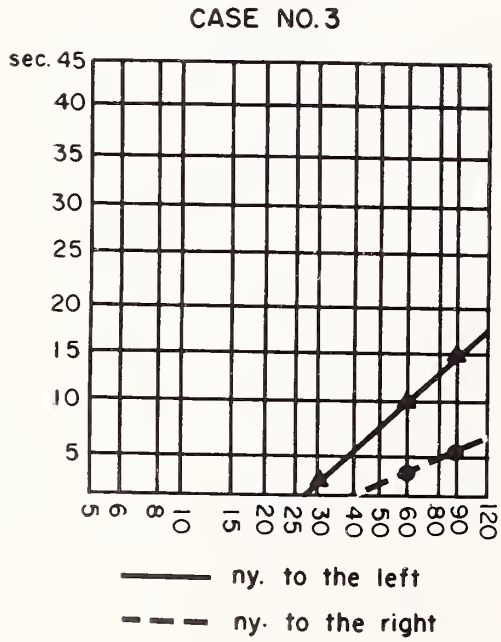
Figure 2

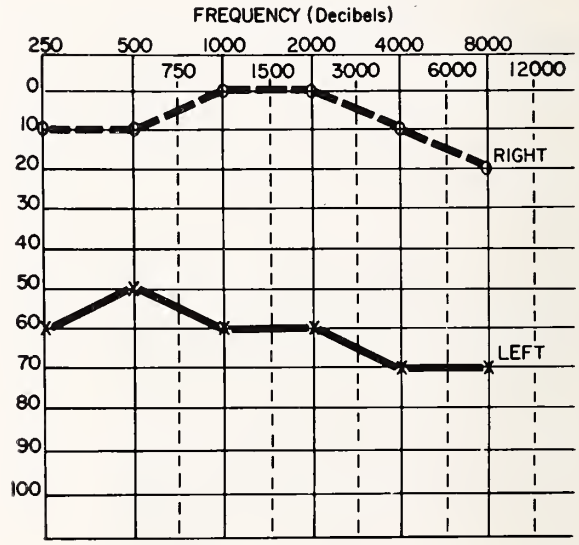
taneous stimulation in both semi-circular canals.

Three clinical cases were selected to demonstrate the importance of using both caloric and simplified cupulometry tests during the same testing procedure. Positive results determining directional preponderance in caloric testing should be substantiated by rotatory testing.

REFERENCES

1. Andersen, H. C.: Directional preponderance in some intracranial disorders. Acta oto-laryng., **44**:568-573, 1954.
2. Aschan, G., Bergstedt, M., and Stahle, J.: Nystagmography; recording of nystagmus in clinical neuro-otological examinations. Acta oto-laryng. (suppl., 129) 1-103, 1956.
3. Cawthorne, T.: Positional nystagmus. Ann. Otol., Rhin. & Laryng., **63**:481-490, (June) 1954.
4. Cawthorne, T., and Hewlett, A. B.: Ménière's disease. Proc. Roy. Soc. Med., **47**:663-670, (Aug.) 1954.
5. Fernandez, C., and Riesco-MacClure, J. S.: Studies on habituation of vestibular reflexes, Ann. Otol., Rhin. & Laryng., **72**:336-345, (June) 1963.
6. Fitzgerald, G., and Hallpike, C. S.: Studies in human vestibular function; observations on directional preponderance ("Nystagmusbereitschaft") of caloric nystagmus resulting from cerebral lesions. Brain, **65**:115-137, (June) 1942.
7. Haas, E., and Becker, W.: Die vestibuläre Neuronopathie (Neuronitis) und ihre Differentialdiagnose. Zschr. Laryng., **37**:174-182, (Mar.) 1958.
8. Hinchcliffe, R.: Role and scope of neuro-otology. J. Iowa Med. Soc., **51**:697-706, (Nov.) 1961.
9. Hinchcliffe, R., and Voots, R. J.: Electronystagmographic technic for examination of vestibular function. Neurology, **12**:686-697, (Oct.) 1962.
10. Jongkees, L. B. W.: Value of caloric test of labyrinth. Arch. Otolaryng., **48**:402-417, (Oct.) 1948.
11. Jongkees, L. B. W.: Ueber die Untersuchungsmethoden des Gleichgewichtsorgans. Fortschr. Hals- Nas-, Ohrenhlk., **1**:1-6, 1953.
12. Kirstein, L., and Preber, L.: Directional preponderance of caloric nystagmus in patients with organic brain diseases; electroencephalographic study. Acta oto-laryng., **44**:265-273, 1954.
13. Ledoux, A.: Résponses électriques de l'ampoule du canal semi-circulaire à l'épreuve calorique. Acta oto-laryng., **46**:290-299, (Jul.-Aug.) 1956.
14. Lierle, D. M., and Reger, S. N.: Correlations between bone and air conduction acuity measurements over wide frequency ranges in different types of hearing impairments. Laryngoscope, **56**:187-224, (May) 1946.
15. Lindsay, J. R., and Hemenway, W. G.: Postural vertigo due to unilateral sudden partial loss of vestibular function. Ann. Otol., Rhin. & Laryng., **65**:692-706, (Sept.) 1956.
16. Milojevic, B., and Subotic, R.: Comparative values of excitation of vestibular apparatus using rotatory and caloric tests. Rad. Med. Fak. Zagreb, **11**:39-49, 1963.
17. Mittermaier, Von R.: Ergebnisse nystagmographischer Untersuchungen. Pract. oto-rhino-larying., **17**:179-190, 1955.
18. Nylen, C. O.: Some cases of ocular nystagmus due to certain positions of head. Acta oto-laryng., **6**:106-137, 1924.
19. Reger, S. N.: Differences in loudness response of normal and hard-of-hearing ear at intensity levels slightly above threshold. Ann. Otol., Rhin. & Laryng., **45**:1029-1039, (Dec.) 1936.
20. Torok, N.: Culmination phenomenon and frequency pattern of thermic nystagmus. Acta oto-laryng., **48**:530-535, (Nov.-Dec.) 1957.
21. van Egmond, Von A. A. J., and Groen, J. J.: Cupulometrie. Pract. oto-rhino-laryng., **17**:206-223, 1955.





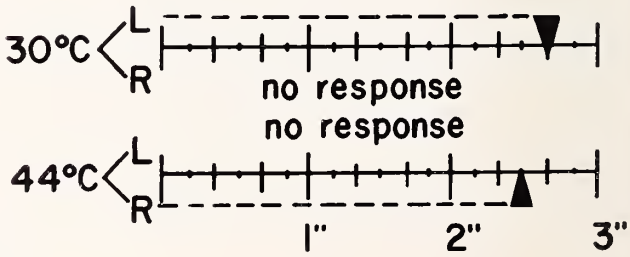


Figure 3

The Atypical Depressive Illnesses

GARFIELD TOURNEY, M.D.,
PETER G. S. BECKETT, M.D., and
JACQUES S. GOTTLIEB, M.D.
Detroit, Michigan

One of the commonest and most significant symptoms of emotional conflict is depression. It occurs as a normal response to many experiences such as the death of a close friend or a loss of self-esteem, in a variety of specific depressive illnesses, in association with many physical illnesses, and in varied and atypical forms. In this presentation, we shall focus upon the symptom as it occurs in conjunction with many illnesses, and shall review the classifications, clinical manifestations, diagnoses, prognoses, suicidal proclivities and treatment regimens of atypical forms of the illness. Many of our observations are based upon an analysis of depressive symptomatology in 1,217 Lafayette Clinic admissions.

Depression is frequently associated with a number of other symptoms, with premorbid personality features and with emotional defense patterns and precipitating factors. Mild forms of depression are often disguised or at least are not overtly expressed by the patient, but in a patient with one of the severe forms, a depressed facies and a generally pessimistic attitude are readily apparent. Table 1 lists the principal signs of depression, in the order of their severity. All of these are common in depressive illnesses, and the more severe the depression, the more numerous and severe are the associated signs. Anxiety and a difficulty in concentration are the most prominent of them. Withdrawal and a reluctance to participate in social activities are common. The other signs include fatigue, agitation, insomnia, suicidal preoccupation and attempts, somatic concern, psychomotor retardation, obsessive-compulsive behavior, loss of weight and of appetite, and constipation. In addition there are many subjective indicators such as concern over failures in life—often very unrealistic—feelings of self-blame and worthlessness, and hopelessness about the future. Vegetative symptoms may include blurring of vision, dryness of the mouth, palpitation, loss of sexual desire, amenorrhea and impotency. These may develop abruptly or insidiously, and may occur for only a short period of time or may be chronic. Since many combinations of them are possible, each patient is almost unique.

Depressive illnesses may be precipitated by various misfortunes such as the death of the spouse, a relative or a friend, a loss of self-esteem, an illness, financial difficulties, a failure in competitive relationships, or certain toxic factors. These precipitating stresses are outlined in Table 2. They can in no sense be regarded as etiologic explanations of the depressions, however, for in many individuals they produce no psychopathologic reactions, and they often may play roles in the development of

The authors are members of the staff of the Lafayette Clinic and the Department of Psychiatry at the Wayne State University School of Medicine. Dr. Tourney presented the paper at the Annual Meeting of the Iowa Medical Society, in Des Moines, last spring.

TABLE 1

SYMPTOMS ASSOCIATED WITH DEPRESSIONS

(Listed in rank order of severity)

1. Anxiety	9. Hypochondriasis
2. Concentration difficulty	10. Psychomotor retardation
3. Withdrawal	11. Obsessive-compulsive traits
4. Fatigue	12. Loss of weight
5. Agitation	13. Suicidal attempts
6. Evening insommia	14. Somatic delusions
7. Morning insomnia	15. Loss of appetite
8. Suicidal preoccupation	16. Constipation

TABLE 2

PRECIPITATING FACTORS

1. Loss of love object as source of dependency gratification a. Death of spouse, relative or friend b. Threat of loss because of illness of spouse, relative or friend c. Rejection or threat of rejection by sexual object	3. Failures in competitive relationships a. For sexual object b. For prestige c. For dependency gratification
2. Injury to self-esteem with lowering of self-concept a. Loss of prestige b. Economic loss c. Physical disease d. Accident or injury e. Demotion	4. Toxic factors a. Alcohol b. Drugs

other psychiatric disorders. It must be admitted that our knowledge about the causes of depression remains limited and confused. A number of premorbid personality traits and early life experiences, as well as biologic factors of genetic, neurophysiologic, neurochemical and endocrinologic natures, play roles. However, in the management of these patients, the current stressful influences must be carefully studied and frequently must be dealt with.

CLASSIFICATION OF DEPRESSIONS

Table 3 contains a classification of depressions that has been of value to us in our clinical work and in our investigation of depressive illnesses.

TABLE 3

CLASSIFICATION OF DEPRESSION

Primary	Secondary
Acute situational depression (Grief reaction)	Depression associated with schizophrenia
Reactive or neurotic depression	Depression associated with intoxication
Manic depressive disease (Includes psychotic depressive reaction)	Depression associated with organic brain disease
Involutional depressive disease	Depression associated with generalized physical disease

It is based upon clinical symptomatology and is related to etiologic factors, in so far as they are known. The pictures of illness presented here are more or less typical. The atypical forms will be classified and described subsequently.

Primary and secondary categories of depression have been defined. In the primary illnesses, the predominant symptom is depression, whereas in the secondary ones depression occurs secondarily to some other specific illness. We have avoided basing our system of classification on the neurotic-psychotic dichotomy. All depressive illnesses may occur in mild or in severe forms. A manic-depressive illness, for example, may not reach the proportions of a psychosis, for the patient may retain contact with reality, function at work and assume responsibilities for others, albeit with difficulty.

In a grief reaction or acute situational depression, usually involving the loss of a close personal relationship through death, loss of position and prestige, financial loss, or rejection by a desired love object, one sees an essentially normal and appropriate emotional response. Depressive symptoms may not be intense. They often vary, depending upon the emotional support coming from the environment. The patient relinquishes grief slowly, often influenced by family and social attitudes, and he gradually adjusts to his loss. Such an individual is particularly likely to turn to his physician for understanding, emotional support and guidance during his period of acute stress.

In the reactive or psychoneurotic depression, the depressive symptomatology predominates, but it is often of an inconsistent nature and is associated with many psychoneurotic symptoms. Minor stressful situations such as marital arguments often precipitate periods of depression, manifested by weeping and a tendency to blame others for the difficulty. Trouble in falling asleep is common. These individuals may also tend to overeat when depressed, and thus may become obese.

Manic-depressive disease is a recurrent, episodic type of illness, occasionally associated with manic periods (elevated mood, overactivity, grandiosity), as well as depressed periods. This illness may be mild in its manifestations, or may reach psychotic proportions. There is a consistent depression, loss of appetite and weight, early-morning insomnia, a great deal of self-blame, feelings of worthlessness and suicidal preoccupation. The first episode usually occurs in early adulthood. Psychomotor retardation is characteristic, and often the patient wears a sad expression and sits, doing nothing, and speaking slowly and softly in monosyllables. The risk of suicide is always great in such patients. Their premorbid personality is characterized frequently by cyclothymia—i.e., frequent, mild mood swings. The course of the illness ordinarily is from six to 18 months, but fortunately it now can be interrupted by appropriate treatment measures.

Involutional depressive disease is characterized by symptoms similar to those of manic-depressive illness. Onset occurs between 40 and 65 years of age, agitation and restlessness occur, and the course tends to be a chronic one. The manifestations range from mild symptoms to severe psychosis. Female patients are often concerned with menopausal changes and a loss of physical attractiveness, and males are often focusing upon retirement, a loss or change of status, and conflicts over working conditions. Delusions of sin and poverty, obsessions about death, and delusional fixations on the gastrointestinal tract and genital organs frequently occur. Suicidal preoccupation is common, and one of the dangers of this illness is suicide. This illness is one of the major causes of suicide in later life.

The major grouping of secondary depressions includes many illnesses in which depression occurs as an emotional reaction or physiological concomitant of another disease process. The major functional psychosis, schizophrenia, often presents the symptoms of many psychiatric illnesses, particularly depression. When depressive symptoms do occur in schizophrenia, they are usually manifest early in the course of the illness, and may persist for only a few months. The primary symptoms eventually predominate in the clinical picture, although in the early stages their minimal manifestations may lead to problems of differential diagnosis, particularly with manic-depressive disease. Various toxic states, particularly alcoholism, have associated depressive symptomatologies. It is ex-

tremely common for depression to occur following an episode of heavy drinking, and the individual may be suicidal at that time. Depression in such a person is related to basic personality problems, and to guilt and remorse over his drinking, as well as to the toxic effects of alcohol. The use of drugs such as barbiturates and the rauwolfia compounds also can produce this type of depression.

Depression is a common symptomatic concomitant of organic brain disease, particularly arterosclerosis and senile brain disorder. Initially during the course of the illness, depressive manifestations may predominate, though later the characteristic manifestations of the organic syndrome are poor judgment, intellectual deterioration and confusion. Many non-cerebral physical diseases, accidents and injuries, and infectious diseases such as influenza, dysentery and infectious hepatitis often present symptoms of depression, and they may persist after apparent physical recovery. Depression may accompany any chronic disfiguring or debilitating disease.

Atypical depressions may be both of the primary and of the secondary types, and may take other forms that need to be more clearly defined.

THE FREQUENCY OF DEPRESSION

We have made a study of depressive symptoms in 1,217 hospitalized psychiatric patients admitted to the Lafayette Clinic. To these patients, we applied a coding system consisting of approximately 500 clinical variables scaled on a nine-point rating system so as to provide an approximate quantitative index of various aspects of clinical functioning.

Table 4 shows the relationship between the severity of depressive symptoms (mild, moderate and severe) and the diagnosis of primary and secondary depressions. Of the 1,217 psychiatric patients, 897 or three-fourths had depressive symptoms. Of those with depressive symptoms, only 239 or one-fourth suffered from primary depressions. These findings illustrate that significant depressive symptomatology occurs in almost three-fourths of all psychiatric patients seen, and that three-fourths of depressed patients have diagnoses of some psychiatric disorder other than primary depression.

TABLE 4

INCIDENCE OF DEPRESSIVE SYMPTOMS

1,217 Psychiatric Patients

	Primary Depressions	Secondary Depressions	Total
Mild	35	334	369
Moderate	74	223	297
Severe	130	101	231
Totals	239	658	897

The frequency of primary depressive illnesses in relationship to the severity of depressive symptomatology is demonstrated in Table 5. There were only eight patients with grief reactions. This finding is undoubtedly related to the fact that most of such patients can be treated effectively on an outpatient basis and do not require hospitalization. As might be expected, more severe depressive symptomatology is characteristic of the manic-depressive and involutional depressive illnesses. The number of patients with mild depressive symptomatology was also relatively small, not because few of these cases occur, but because patients with mild symptoms can usually be managed in an outpatient setting.

TABLE 5

FREQUENCY OF PRIMARY DEPRESSIVE ILLNESSES

1,217 Psychiatric Patients

	Mild	Moderate	Severe	Totals
Grief reactions	4	2	2	8
Reactive depression	13	42	33	88
Manic depressive disease	9	16	55	80
Involutional depressive disease	9	14	40	63
Totals	35	74	130	239

Table 6 shows the relationship between the severity of depressive symptoms and psychiatric illnesses other than primary depression. It is interesting to note that depressive symptoms are extremely common to patients in all these various

TABLE 6

DEPRESSION ASSOCIATED WITH VARIOUS PSYCHIATRIC DISORDERS

(Excludes Primary Depressions)

1,217 Psychiatric Patients

	Mild	Moderate	Severe	Total Depressed	Total Non-Depressed	Total
Personality disorders	103	65	18	186	85	271
Psychoneuroses	46	30	8	84	39	123
Psychophysiological disorders	11	4	3	18	5	23
Schizophrenic reactions	118	86	45	249	107	356
Acute brain syndromes	4	5	2	11	12	23
Chronic brain syndromes	38	27	20	85	28	113
Miscellaneous	14	6	5	25	44	69
Totals	334	223	101	658	320	978

diagnostic categories. In our series, they occurred in 186 of 271 patients with personality disorders, in 84 of 123 of those with psychoneuroses, in 249 of 356 schizophrenic patients, and in 85 of 113 with chronic brain syndromes, just to mention the more common psychiatric diagnoses. The more severe depressive symptomatologies are associated with schizophrenia and chronic brain syndromes. These figures emphasize the fact that depression is an extremely common symptom among hospitalized psychiatric patients. It would be interesting to know similar figures for the outpatient psychiatric population, and also for the patient populations of general hospitals and office practices. Currently, investigation in those areas is being planned.

CLASSIFICATION AND DIAGNOSIS OF ATYPICAL DEPRESSIONS

Table 7 contains a scheme for classifying atypical depressions. Many atypical depressions actually

TABLE 7

ATYPICAL DEPRESSIONS

Manic depressive variants	Depressions associated with personality disorders
a. Mild	Depressive character
b. Irritable	Delayed grief reactions
c. Paranoid	
Involutional depressive variants	Secondary depressions
a. Mild	a. Schizophrenia
b. Irritable	b. Intoxication
c. Paranoid	c. Organic brain disease
	d. Generalized physical disease
Reactive depression variants	

are variants of the classical primary depressive syndromes. This is particularly true of manic-depressive and involutional depressive illnesses. Mild forms of these disorders occur, and because of the emphasis that the patients give to fatigue and somatic complaints, it is easy for the physician to focus on those ones of their difficulties. After ruling out organic disease, he often chooses psychoneurosis as his diagnosis. Such mild symptoms often characterize the early phases of a depressive illness, and if recognized early and treated appropriately, the psychotic features of the illness can be prevented.

Another important reason for distinguishing the mild depression from the psychoneurosis is that the mode of therapy differs. Anti-depressive medications—the so-called energizers—are of particular value here, whereas sedatives and tranquillizing medications suitable for psychoneurotic patients may only augment depressive symptomatologies. One should also note that it is unusual for an initial development of psychoneurotic symptoms to occur in a patient after the age of 30 years. Psychoneuroses tend to develop in young adulthood or earlier, and to persist into middle life, whereas initial episodes of depression often begin during middle age and late in life.

Patients with depression are embarrassed and guilty regarding their illness, and often disguise or hide their feelings from others. Their relatives and friends may never realize the inner turmoil and suffering that they experience. Clues to the difficulty can be seen only in some vague somatic symptoms—fatigue, loss of energy, and lack of interest in activities and people. In some instances, in fact, the initial overt manifestation of the depression may be a suicidal attempt, particularly in manic-depressive or involutional depressive patients.

Irritable depressions differ in that the focus of the patient's pathologic hostility, fostered by a personal loss or a loss of self-esteem, is directed not only at himself—as self-blame, and feelings of failure and self-abnegation—but also at others, particularly at those with whom he has strong emotional ties such as his spouse or his life-long friends. He fluctuates between self-blame and object-blame; latent, ambivalent problems of love and hate, dependency and hostility are outstanding features of his illness.

In these instances the patient is often regarded as wrong, rather than ill, and thus may be subjected to a considerable amount of reciprocal hostility, rather than being given the tolerance and understanding that he needs. These negative family attitudes may reinforce his symptoms and augment them. In fact, certain family and marital problems are directly related to the depression of one of the members of the family group. Treatment for the specific depressive illness is required, rather than the other measures that are often applied to family problems related to personality factors.

The irritable depression often tends to merge into the paranoid one. In the latter, blame directed toward others, suspiciousness, jealousy and definite paranoid ideation occur. Here the depressive condition is often confused with schizophrenia, but where the depressive symptoms predominate over paranoid ideation, the paranoid symptoms usually respond to treatment aimed at the depressive symptomatology. It is important to emphasize here that paranoid ideation, like depression, is a common psychiatric symptom and is by no means indicative of schizophrenia.

Depression, as has been noted, is commonly seen in psychoneurotic conditions, as well as in reactive depressions. Such symptoms may be masked by other neurotic complaints such as anxiety, phobias and somatic concern. The hysterical patient often has a characteristic indifference *(la belle indifference)* to the conversion symptom, and depression is therefore infrequent. Moderate to severe depressive symptoms are often seen in the most severe

and debilitating of the psychoneuroses, the obsessive-compulsive reaction. Obsessive ideas—usually irrational, hostile and sexual thoughts, and compulsive and ritualistic behavior aimed at undoing those thoughts—are often accompanied by extreme feelings of guilt and a resultant depression.

The personality disorders, a large and varied group of disturbances in interpersonal functioning, include such deviate behavior as is seen in the personality pattern and trait disorders, as well as in the frankly sociopathic ones. This conglomerate of patient groups is characterized by a common factor. The emotional conflict is expressed in some feature of the patient's outward behavior. It is acted out, rather than being internalized and repressed, as would be characteristic of the psychoneurotic patient. Patients with personality disorders have fixed and long-standing patterns or traits in their personality organizations that interfere with the maintenance of emotional equilibrium and adequate social adaptability. They use various means in attempting to manipulate the environment for their own immediate ends, they tend to be inconsiderate of others, and they have difficulty in assuming responsibility, in delaying the gratification of their impulses, and in tolerating frustration. They have been divided into the inadequate, the paranoid, the emotionally unstable and the passive-aggressive personalities. The extreme forms of personality disorders previously referred to as psychopathic personalities present severe forms of social maladjustment such as sexual deviations, addiction problems and criminal behavior. Personality disorders are common, and they present many treatment and dispositional problems to physicians, psychiatrists, social agencies and legal authorities.

As is demonstrated in Table 6, two-thirds of this group of patients at Lafayette Clinic had significant depressive symptomatology. When their self-centered, acting-out behavior fails to work and when their associates reject them, such patients react with more typical neurotic defenses, and manifest such symptoms as anxiety and depression. Depression can be superimposed, therefore, upon a basic personality disturbance. In these cases, frequently, the focus of management should not be placed upon the underlying personality problem until the depressive symptoms have been treated. Of course, when these patients successfully manipulate situations and persons in their environment, they are freed from any disturbing subjective symptoms. Hence, any depressive symptomatology is frequently related to immediate frustrating circumstances which can easily be defined. If they continue, the patient's anxiety and depressive symptoms persist. Suicidal gestures, utilized as attempts to manipulate the environment, then occur frequently. The seriousness of these attempts must be evaluated, however, and I shall discuss that problem later.

The depressive character is actually a special type of personality-pattern disorder, although as yet it has not been included in the standard nomenclature. Patients of this sort tend to be very unhappy, withdrawn and dissatisfied individuals, who are depressed throughout most of their lives. Often, their existence has been one of extreme parental deprivation in early childhood, with loss of or rejection by their parents, and many foster homes or institutional placements. As a result, their dependency and affective needs have been frustrated, they have become convinced early in their lives that life is hopeless and meaningless, and that they are unwanted. At times these individuals may give a superficial appearance of being withdrawn and retarded like the manic-depressives, but at other times they appear to lack affect and are thought of as schizophrenics. The history here is most important. It reveals a life-long pattern of deprivation, poor identity, and chronic feelings of depression and worthlessness.

Grief reactions occur characteristically as an immediate response to the object loss or loss of self-esteem. At times such an individual experiences no typical response to the situation, but in a matter of weeks, months or even several years, focuses upon the stressful situation and undertakes the process of working through the loss. Such a delay may be related to an initial unconscious denial of the realities of the loss, but with time there is a gradual awakening to its significance, and typical manifestations of grief appear.

The many forms of secondary depressions have diverse symptomatic pictures and are related to the primary illness in many ways. The element of depression, whether occurring as an emotional reaction to the basic illness or as a physiological concomitant of it, may not be realized because of the symptoms of the underlying disorder. It should also be noted that with some physical disorders, the symptoms of depression may be initial ones, prior to definite signs and symptoms indicating the physical illness. This is particularly true of senile and arteriosclerotic brain disorders. An interesting example of this was recently seen in a 32-year-old male who became acutely depressed, threatened suicide and demanded to be hospitalized for protection against such impulses. Thirty-six hours later he developed a mild fever, nuchal rigidity and a clouding of consciousness. His spinal fluid contained an increased number of lymphocytes. The typical symptoms of an acute viral encephalitis then ensued, but initially the patient had presented symptoms of a severely agitated depression.

Table 8 contrasts the symptomatic pictures of typical and atypical depressions. Neither group of illnesses can be diagnosed strictly on the basis of these clinical symptoms. These features, however, should aid the physician in making an appropriate diagnosis and in planning treatment.

TABLE 8

DEPRESSIVE SYMPTOMS

	Typical Depressions	Atypical Depressions
Mood	Overt depression	Disguised depression
Somatic complaints	Common	Predominant
Fatigue	Common	Emphasized
Sleep	Insomnia	Hypersomnia/Insomnia
Appetite	Decreased	Increased/Decreased
Weight	Loss	Obesity/Loss
Hostility	Self depreciation	Irritability
Consistency of symptoms	Consistent	Inconsistent
Impulsivity	Infrequent	Common
Paranoid tendencies	Infrequent	Common
Suicidal predictability	Yes	No
Associated diseases	Uncommon	Common
Response to therapy	Good	Fair

PROGNOSES IN ATYPICAL DEPRESSIONS

The prognosis in any atypical depression is dependent upon the basic underlying emotional or physical difficulty. Table 9 summarizes the expected outcomes for patients with the various syndromes. There are good prognoses for those with variants of manic-depressive, involutional depressive, neurotic and grief reactions. In those with personality disorders, the symptom of depression often fluctuates and will improve with a change for the better in the individual's life circumstances, but modifications in the patient's basic personality structure often cannot be made, and further periods of depression can be anticipated. For the patient with depressive character, the prognosis must be guarded unless there is continual support from others. Where the prognosis is guarded and where depressive symptomatology recurs, the patient may resort to suicide as a solution for his life problems.

TABLE 9

PROGNOSIS OF ATYPICAL DEPRESSIONS

Manic depressive disease variants	Good
Involutional depressive disease variants	Good
Reactive depression variants	Good
Depressions associated with personality disorders	
For depression	Fair
For personality disturbance	Guarded
Depressive character	Guarded
Delayed grief reactions	Good
Secondary depressions	Variable

SUICIDE AND ATYPICAL DEPRESSIONS

Any patient having depressive symptoms has a suicidal potential that must be carefully evaluated. Regardless of whether he overtly expresses a suicidal preoccupation or intent, he must be considered a suicidal risk until proved otherwise. An analysis of suicides by psychiatric diagnoses is presented in Table 10. This analysis is based upon 25 known cases of suicide in patients treated on an inpatient or outpatient basis over an eight-year period at the Lafayette Clinic. From this table, one is impressed by the fact that half of the suicides were committed by patients with personality disorders, and only a third by patients who suffered from the typical depressive illnesses. Schizophrenia accounted for one-sixth of the suicides.

TABLE 10

SUICIDE: AN ANALYSIS BY PSYCHIATRIC DIAGNOSES

N = 25

Personality disorder	12
Schizophrenia	4
Manic depressive disease	4
Reactive depression	2
Involutional depressive disease	2
Organic brain disease	1

It is ordinarily and correctly supposed that the most serious suicidal risks occur in manic-depressive and involutional depressive illnesses. In these disorders the illness is more easily recognized, the suicidal risk is understood, and the clinicians adopt appropriate methods of terminating the illness and protecting the patient from his self-destructive impluses. In personality disorders and schizophrenia, suicidal intent is more difficult to predict, for it often is impulsive or bizarre. Particularly in patients with personality disorders, there may be a history of a number of suicidal attempts aimed at manipulation of the environment.

Factors influencing suicidal risk in atypical depressions are presented in Table 11. Disguised depressive symptoms, along with a denial of such symptoms, are seen in manic depressive and involutional depressive patients. Personality-disorder patients tend to commit suicide when their acting-out behavior fails, when persons in the environment cannot be manipulated or reject the patient, or when they fail to come to rescue the pa-

TABLE 11

FACTORS INFLUENCING SUICIDAL RISK IN ATYPICAL DEPRESSIONS

1. Disguised depressive symptoms
2. Denial of depressive symptoms
3. Functional failure of acting out behavior
4. Inability to manipulate persons in the environment
5. Pervasive rejection by persons in the environment
6. Failure of rescue by persons in the environment
7. Realization of the emptiness of their lives
8. Emergence of latent guilt feelings
9. Provocation of suicide by persons in environment
10. Delusional thinking related to death and suicide

tient after the suicidal attempt. Often in the fourth and fifth decades of life, individuals with personality disorders realize the emptiness of their lives, or become conscious of hitherto latent guilt feelings, leading to suicide. Individuals in the environment can induce and provoke suicide. This can occur when two people with personality disorders interact. A woman who has threatened suicide on many occasions as a form of manipulative behavior may finally be told by her husband to go ahead with the act, and so she revengefully commits suicide. Schizophrenic patients may have delusional ideas related to death and suicide, and may respond to hallucinations telling them to carry this out.

TREATMENT OF ATYPICAL DEPRESSIONS

Only a brief résumé of treatment methods for atypical depressions can be made here. With the diagnosis of atypical depression and the initiation of appropriate treatment measures, marked improvement in an originally confusing illness may occur. Remarkable improvement in symptomatology may follow the introduction of several forms of anti-depressive medication such as the monoamine-oxidase inhibitors, imipramine and amitriptyline. The need for electroconvulsive therapy for the treatment of manic depressive and involutional illnesses has been geratly reduced, and it ordinarily is needed only in the more severe and typical forms of these disorders. Appropriate psychotherapeutic measures should be carried out, and may involve prolonged exploratory psychotherapy for the psychoneurotic and personality-disorder patients. Table 12 outlines the therapeutic methods indicated in the management and treatment of atypical depressions.

TABLE 12

TREATMENT OF ATYPICAL DEPRESSIONS

Manic Depression Variants
Involutional Depression Variants
1. Anti-depressive medication
2. Supportive psychotherapy
3. Electro-convulsive therapy
Reactive Depression Variants
1. Anti-depressive medication
2. Supportive psychotherapy
3. Exploratory psychotherapy
Depressions Associated with Personality Disorder
1. Anti-depressive medication
2. Environmental therapy
3. Supportive psychotherapy
4. Exploratory psychotherapy
Depressive Character
1. Environmental therapy
2. Supportive psychotherapy
Delayed Grief Reaction
1. Anti-depressive medication
2. Supportive psychotherapy
Secondary Depressions
1. Treatment of primary illness
2. Anti-depressive medication
3. Supportive psychotherapy

SUMMARY AND CONCLUSIONS

This presentation has emphasized that the symptom depression is very common in both psychiatric and physical disorders. Approximately three-fourths of hospitalized psychiatric patients, regardless of diagnosis, have depressive symptoms. Depressions occur as classical syndromes, but more often in many atypical forms and variants, and in association with other psychiatric illnesses, organic brain disorders, toxic states, general physical disorders and injuries. The need to recognize these atypical forms of depression, to evaluate them for suicidal risk, and to institute appropriate anti-depressive therapies has been reviewed.

REFERENCES

1. Abraham, K.: "Manic-Depressive States and the Pregenital Levels of the Libido," In: Selected Papers. London, Hogarth Press, 1927, pp. 418-479.
2. Ascher, E.: Criticism of concept of neurotic depression. Am. J. Psychiat., **108**:901-908, (June) 1952.
3. Ayd, Frank J., Jr.: Recognizing the Depressed Patient. New York, Grune and Stratton, 1961.
4. Bellak, L., *et al.*: Manic-Depressive Psychosis and Allied Conditions. New York, Grune and Stratton, Inc., 1952.
5. Freud, S.: "Mourning and Melancholia," In: Collected Papers, Vol. 4. London, Hogarth Press, 1925, pp. 152-170.
6. Garmony, G.: Depressive states: their aetiology and treatment. Brit. M. J., **2**:341-344, (Aug. 9) 1958.
7. Gottlieb, J. S., and Tourney, G.: Depressive illnesses: their diagnosis and treatment. J. of Chron. Dis., **9**:234-248, (March) 1959.
8. Greenacre, P. (ed.): Affective Disorders, Psychoanalytic Contributions to Their Study. New York, International Universities Press, 1953.
9. Grinker, Roy R., Sr., *et al.*: The Phenomena of Depressions. New York, Paul B. Hoeber, 1961.
10. Huston, P., and Locher, L. M.: Involutional psychosis: course when untreated and when treated with electric shock. Arch. Neurol. & Psychiat., **59**:385-394, (Mar.) 1948.
11. Huston, P., and Locher, L. M.: Manic-depressive psychosis; course when treated and untreated with electric shock. Arch. Neurol. & Psychiat., **60**:37-48, (July), 1948.
12. Kalinowsky, L. B., and Hoch, P. H.: Shock Treatments, Psychosurgery and Other Somatic Treatments in Psychiatry, 2nd Edition. New York, Grune and Stratton, Inc., 1952.
13. Kallman, F. J.: "Genetic Principles in Manic-Depressive Psychosis," In: Hock, P., and Zubin, J.: Depression. New York, Grune and Stratton, Inc., 1954, pp. 1-24.
14. Kallman, F. J.: Heredity in Health and Mental Disorder. New York, W. W. Norton & Co., Inc., 1953.
15. Lewis, A. J.: Recent progress in psychiatry; depressions. J. Ment. Sci., **90**:256-265, (Jan.) 1944.
16. Lewis, A. J.: Melancholia: historical review. J. Ment. Sci., **80**:1-42, (Jan.) 1934.
17. Malamud, W., Sands, S. L., and Malamud, I.: Involutional psychoses: socio-psychiatric study. Psychosom. Med. **3**:410-426, (Oct.) 1941.
18. Mayer-Gross, W., Slater, E., and Roth, M.: Clinical Psychiatry, Baltimore, Williams and Wilkins Co., 1955.
19. Moll, A. E.: Suicide: psychopathology. Canad. M.A.J., **74**:104-112, (Jan. 15) 1956.
20. Oltman, J. E., and Friedman, S.: Role of hostility in affective psychoses. J. Nerv. & Ment. Dis., **97**:170-196, (Feb.) 1943.
21. Oliven, J. F.: Suicidal risk: its diagnosis and evaluation. New England J. Med., **245**:488-494, (Sept.) 1951.
22. Rado, S.: Psychodynamics of depression from etiologic point of view. Psychosom. Med., **13**:51-55, (Jan.-Feb.) 1951.
23. Rennie, T. A. C.: Prognosis in manic-depressive psychoses. Am. J. Psychiat., **98**:801-814, (May) 1942.
24. Shneidman, E. S., and Farberow, N. L. (eds.): Clues to Suicide. New York, McGraw-Hill Book Co., Inc., 1957.
25. Stainbrook, E.: "A Cross-Cultural Evaluation of Depressive Reactions," In: Hoch, P., and Zubin, J.: Depression. New York, Grune and Stratton, Inc , 1954, pp. 39-50.
26. Symposium on depression: its diagnosis and treatment. J. of Neuropsych., Vol. 2, Suppl. 1, S1-S165, (Feb.) 1961.

University of Iowa
College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A SIX-YEAR-OLD BOY was admitted to the University Hospitals with the following history. His mother had had jaundice during the third trimester of her first pregnancy, and her firstborn, a boy, had been jaundiced at birth, but both the mother and he had recovered within a few weeks. The patient with whom we are to be concerned was the second child. Again, the mother had been jaundiced during the third trimester of pregnancy. A serum bilirubin taken one month prior to delivery was 8.2 mg. per cent (one minute), and 18.7 mg. per cent (30 minutes). Labor and delivery had been uncomplicated. As a newborn, the patient had been slightly icteric, and had become increasingly jaundiced in the course of the next four or five weeks. At nine weeks of age, he had had an enlarged liver, but his spleen had not been palpable. His hemoglobin level had been 9.5 Gm. per cent, his serum bilirubin 17.4 mg. per cent (30 minutes), and his stool had contained bile. The jaundice apparently had lasted for several months, and then had cleared. During the ensuing four years, the child had been in good health, but when he was four and one-half years old the family physician had found hepatosplenomegaly. At exploratory laparotomy, the surgeon had made a diagnosis of cirrhosis of the liver and had removed an accessory spleen.

Another hospitalization had been necessary two years later, when the child was about six years of age, because he had had episodes of hematemesis accompanied by blood in the stool. Anemia had been noted, and he had been taking ferrous gluconate (Hematinic). He had also suffered from episodes of epistaxis. He wasn't jaundiced then, but hepatosplenomegaly was noted. The direct bilirubin was 1.4 mg. per cent, and the indirect 1.0; the thymol turbidity was 10 units; a bromsulphthalein test was normal; the serum proteins were 6 Gm. per cent; and the albumin-globulin ratio was 3.1/2.1. The prothrombin time was normal. His hemoglobin level was 7.4 Gm./100 ml., with a hematocrit of 22 per cent. The white blood cell count was 12,000/cu. mm., and the peripheral blood smear was normal.

After four weeks, the child was transferred to the University Hospitals. Physical examination revealed a rather pale but active and alert boy. His body length was 115 cm., and his body weight was 23.5 Kg. His blood pressure was 110/70 mm. Hg, his respiratory rate was 20/min., and his pulse rate was 88/min. Telangiectasia was noted over his face and trunk. Clubbing of the fingers was present, and his palms were pale. No jaundice was present. Crusted blood was found around his nose. His heart and lungs were normal to auscultation and percussion. Prominent superficial veins were present over the abdomen. The liver was difficult to palpate, but appeared to be firm and slightly enlarged. The spleen was firm, and reached below the level of the umbilicus.

Laboratory data revealed a hemoglobin level of 6.9 Gm. per cent, and a white blood cell count of 4,000/cu. mm., with a peripheral smear of 57 per cent segmentals, 12 per cent eosinophils and 31 per cent lymphocytes. The hematocrit was 22 per cent. A fragility test had an initial hemolysis at 0.42 per cent, and it was complete at 0.28. The blood platelet count ranged between 76,000 and 196,000/cu. mm. Stools were positive for blood. Urine urobilinogen and urine bile were recorded as 2+ to 3+ on several occasions. Thymol turbidity was 6.2 units; zinc flocculation was 20 units; alkaline phosphatase was 10.4 units; and serum glutamic oxalacetic transaminase was 186 units. The serum cholesterol was 263 mg. per cent. The albumin-globulin ratio was 3.0/5.3 Gm. per cent. Serum calcium was 9.8 mg. per cent, and serum amylase was 186 units. Blood urea nitrogen and creatinine, as well as serum electrolytes, were normal. The serum bilirubin was 1.3 mg. per cent on the day of admission, and 16.7 mg. per cent eight days later. The BSP revealed a 19 per cent retention after 45 minutes.

Roentgen examinations of the esophagus, upper gastrointestinal tract and chest were interpreted as normal, as were intravenous pyelograms. A roentgenogram of the abdomen was interpreted as showing a large spleen. The patient was given repeated transfusions until his hemoglobin level reached 12.2 Gm. per cent, and he was then operated upon. The portal pressure measured 370 mm. H_2O. Fifty per cent diatrizoate sodium (Hypaque) was injected into an omental vein,

and roentgenograms were taken which showed a normal-size portal vein. The radicles of the vein in the liver indicated cirrhosis. No gastric varices were seen. An end-to-side splenorenal anastomosis was carried out. After completion of the shunt, the portal pressure measured 290 mm. H_2O. Postoperatively, the child had recurring pyrexia for 48 hours, and then began to have episodes of hematemesis and dark-red stools. The hemoglobin level fell to 6.0 Gm. per cent. Transfusions were given, and tamponade with a Sengstaken-Blakemore tube was attempted unsuccessfully. The child died four days after the operation.

CLINICAL DISCUSSION

Dr. Donal L. Dunphy, Pediatrics: We want to welcome Dr. Lee Forrest Hill, of Des Moines, who will participate in the conference today. I'm sure I don't need to introduce him to most of you. He is the foremost pediatrician in the State of Iowa, and is nationally and internationally one of our outstanding pediatricians.

Mr. Nibbelink will discuss the case on behalf of the students.

Mr. D. Nibbelink, junior ward clerk: Jaundice during pregnancy can occur in bacterial, viral, syphilitic, hemolytic and biliary obstructive disorders. In toxemia of pregnancy, following the administration of certain drugs and the ingestion of exogenous hepatic poisons, jaundice may also be present. Sheehan, in 1961, reported that jaundice had occurred during pregnancy once in every 2,000 to 3,000 deliveries. Three-fourths of such cases develop during the last trimester, and the majority of patients recover two or three weeks after delivery.

In recurring idiopathic jaundice of pregnancy (hepatosis), the most significant features are that the condition occurs for approximately equal lengths of time in more than one pregnancy, and that the patient is well between pregnancies. Bilirubin is increased, but flocculation and thymol turbidity tests are normal. However, there usually is a pre-icteric phase marked by pruritis, vomiting and epigastric pain for one or two weeks. Then the jaundice begins, and it may clear after three or four weeks, or soon after delivery. The baby is frequently born prematurely, but almost always recovers completely.

For these reasons, we regard recurrent idiopathic jaundice as unlikely in the situation that has been described in the protocol. We have no history to suggest that the mother's jaundice was bacterial, syphilitic, drug-induced or a consequence of biliary obstruction. We should expect a greater difference between direct- and indirect-reacting bilirubin if a hemolytic process had been present. Since the jaundice was relieved following delivery, we have ruled out an obstruction of the biliary system.

Neonatal jaundice persisting for more than one week may be due to congenital atresia of the bile ducts, toxoplasmosis, cytomegalic inclusion disease, galactosemia, inspissated bile syndrome, septicemia, congenital syphilis, congenital spherocytosis, herpetic hepatitis, acquired hemolytic anemia, prematurity and neonatal hepatitis. The incidence of neonatal hepatitis as a cause of neonatal jaundice varies from 16 to 25 per cent in various series. Approximately 70 per cent of affected infants recover without residual damage; 20 per cent die of acute disease; and 10 per cent eventually develop hepatic cirrhosis.

Stokes, in 1954, reported that viral hepatitis B (serum hepatitis) can persist in a carrier state for up to five years and can cause hepatic damage by transplacental transmission. Liver-function studies may be normal during this five-year period. A few authors report that viral hepatitis A (infectious hepatitis) can also cross the placental barrier, but most investigators don't agree. Many cases of infectious hepatitis in pregnancy result in premature deliveries, but uncomplicated pregnancies are not uncommon. A report from the Mayo Clinic in 1957 indicated that juvenile cirrhosis had been found to be caused by hepatitis in the vast majority of cases.

Craig and co-workers, in 1955, reported that the initial episode of jaundice is caused by viral hepatitis, followed by a quiescent period lasting from seven months to four years, when the patients were free from jaundice and were essentially asymptomatic. Then there was a recurrence of jaundice, ascites, esophageal varices, and eventually the full clinical picture of cirrhosis of the liver. All but one of their patients developed congestive splenomegaly with depression of platelets, and liver-function tests were abnormal in all patients. In addition to neonatal hepatitis, Craig reported that children, from infancy on, are subject to various insults that result in hepatic damage. These include infections, nutritional difficulties, toxins, cardiac cirrhosis, glycogen-storage disease and transfusional hemosiderosis. We consider these conditions incompatible with the course of this patient's illness.

Erythroblastosis fetalis is said to occur once in every 200 deliveries. Yet reports of secondary liver damage are rare. Hemolytic disorders tend to clear in a few weeks, whereas in this patient jaundice persisted for several months. Cytomegalic inclusion disease is an infantile clinical syndrome associated with enlarged epithelial cells bearing intranuclear and cytoplasmic inclusions in salivary glands, liver, kidney, spleen, islet cells of the pancreas, and lungs. The cytomegalovirus is capable of transplacental transmission. In 1962, Weller reported hepatosplenomegaly in all patients with this disorder. Jaundice may last from a few days to seven months. Microcephaly, mental retardation and motor disability, however, were associated in the majority of patients. In addition, a direct bilirubin usually exceeded 50 per cent of

the total bilirubin. Jaundice was present in 60 per cent of patients affected, but there was no history of jaundice during pregnancy.

It is our impression that this patient suffered from juvenile cirrhosis, probably caused by the transplacental transmission of viral hepatitis B (serum hepatitis), or possibly viral hepatitis A (infectious hepatitis). We believe the hepatitis in the mother had been in a subclinical stage, and that during pregnancy the added burden on the liver caused clinical manifestations in her.

Pregnancies causing an increased load on the liver have been documented in the literature. Lichtman states that patients with mild jaundice may not appear ill, stools are not acholic, there is no loss of appetite, and the patients generally feel well. A normal parturition usually takes place, and jaundice gradually disappears following delivery. During the next pregnancy, jaundice may develop again.

We regard cytomegalic inclusion disease and toxoplasmosis as unlikely, since there is no history of central nervous system disorder. We are unable to rule out intra- and extrahepatic biliary obstruction, since these conditions can produce similar clinical manifestations. There is no history of acholic stools, however, and thus we assume that the biliary tree remained patent throughout the child's illness. Thus, we tend to rule it out. On the basis of the history, we rule out galactosemia, septicemia, congenital spherocytosis, herpetic hepatitis, acquired hemolytic anemias and prematurity.

We attribute this patient's death to uncontrolled gastrointestinal hemorrhage complicated by impaired liver function. We are unable to rule out complications of an end-to-side splenorenal shunt procedure, such as thrombus formation and kinking at the anastomotic site.

Dr. Dunphy: Dr. Carter will discuss the protocol for the staff.

Dr. Robert E. Carter, Pediatrics: Since many of you haven't read the protocol until this moment, it may be difficult for you to start at the end of the case record and proceed to the beginning—the proper way to analyze the present case. Yet that is what I must ask you to do.

This child died of irreversible shock. His shock resulted initially from acute blood loss into his gastrointestinal tract, with resultant hypovolemia of his vascular compartment. Profound ischemia of his liver and intestinal tract occurred, both as a result of his low blood volume and low cardiac output, and as a result of sustained vasoconstriction of vessels supplying those viscera.

This phenomenon of shock is familiar to all of you. Splanchnic, musculocutaneous and renal circulations are reduced so as to maintain cerebral and coronary perfusion. Ischemia of skin and muscle doesn't cause the serious sequelae of shock. Even renal ischemia can be well tolerated for a period of time. However, a profound alteration of function occurs in the intestinal tract and liver, and it makes the shock "irreversible." The substance producing this irreversibility is thought to relate to gram-negative bacteria from the intestinal tract and to the endotoxin which they produce. These bacteria or their endotoxins gain access to the portal circulation through ischemic and ulcerated areas of intestinal mucosa. The endotoxin effect on blood vessels renders them immune to the effect of endogenous vasopressor substances or to those administered to the patient by his desperate physician. Vascular dilatation, pooling and stasis of blood in visceral areas, and sustained hypotension with a complete lack of response to the administration of blood or other vascular-compartment expanders are the terminal events.

The pathologist should see focal necrosis in the liver, ulcerations and ischemic changes in the intestinal mucosa, and possibly the deposition of fibrinoid material in small blood vessels as the result of bacterial endotoxin effect. A second finding at postmortem could well be septicemia other than that which may occur terminally in irreversible shock. I don't imply that the terminal or agonal septicemia is insignificant. It most certainly is important, and it can be related to the direct, immediate and pressing cause of death in many people, despite our tendency to dismiss it as something of little consequence. But this child probably had had coliform bacteremia for some time—maybe intermittently for several months—and unquestionably had a septicemia before or after surgery. The infecting organism was Escherichia coli; the portal of entry was the intestinal tract; and the dissemination of this infection was enhanced by the presence of abnormal communications between the portal and the systemic blood circulations. This septicemia may have been a factor in his shock equal in importance to his acute blood loss. We shall return to his abnormal communications between the portal and systemic circulations in a moment.

Where did this child bleed? The most likely area was in the lower portion of his esophagus, where increased venous channels connected his portal and systemic circulations. These varices may not be well visualized radiographically. Their reason for bleeding isn't always apparent, but it may relate to the reflux of acidic gastric contents into the lower esophagus, with consequent ulceration, or to the trauma of swallowing. The child may have had a peptic esophageal ulcer without varices; he may have had a gastric or duodenal ulcer which bled uncontrollably; but past experience in similar cases indicates that the lower esophagus would have been the most likely site. Apparently the surgeons thought so, for they tried to compress that rather easily expansible area with a balloon tamponade. Their lack of success was discouraging, but was to be expected in a large proportion of childhood cases. Could this pa-

tient have suffered from a ruptured esophagus? Rupture of the esophagus, either the Boerhaave syndrome of spontaneous rupture or that associated with exertion or stretching, a partial tear, the Mallory-Weiss syndrome—any of these could have occurred, but they must be low on the list. Many odd situations can occur in the esophagus. An esophageal ulcer can even penetrate the aorta and bleed profusely, but these oddities I shan't discuss.

I should like to dwell on the diagnosis of upper intestinal tract bleeding a little longer. Until the point of bleeding has been visualized, the location must remain in doubt. In the present case, the odds favored its being in the lower esophagus, but the only way of making sure would have been to esophagoscope and gastroscope the patient. Would this add appreciable risk of further bleeding? Probably not, if we can believe recent reports of experienced operators, and the information gained can be invaluable. The roentgen visualization of the portal vein failed to show extensive varices in the gastric and presumably in the lower esophageal areas.

I must reopen the question of upper-gastrointestinal bleeding from sites other than the esophageal varices. Let's go back a step further in the protocol, to the time the child was admitted to the University Hospitals. He then demonstrated two principal features. First, there was evidence of interference with the passage of portal venous blood through the liver to the hepatic vein. Second, there was evidence of deranged function of the liver cells themselves. The first problem produced his most serious symptoms. Obstruction of intrahepatic venous circulation can occur in the interlobular areas, or through extensive fibrosis of the lobules themselves with sinusoidal interruption, or through chronic passive congestion with reaction around the central vein of the lobule.

We shan't discuss the intriguing possibility that there was increased arteriolar pressure in the radicles of the hepatic artery, although that may be a factor in interlobular cirrhosis. I mention it only to remind you that the hepatic artery and the venules of the portal vein enter a common sinusoidal system in the liver lobule.

I assume that this child had fibrosis of both the interlobular areas of his liver, and extensive derangement of the lobular structure with fibrosis, which must involve the sinusoids as well. Proliferating bile ducts and pseudolobules would complete the histologic picture. The result of this was a necessary development of collateral circulation, as evidenced by the prominent abdominal veins and the presumably dilated veins in other areas of potential connection between the portal and systemic circulations. These collateral channels made the patient increasingly susceptible to blood-stream infection by organisms in his intestinal tract. The protective mechanism provided by the reticuloendothelial cells of the liver sinusoids was largely lost, and thus the risk of bacteremia was increased.

I elect to explain his splenomegaly on the basis of portal hypertension, and his alterations in platelets and white blood cell count on the basis of hypersplenism. Abnormal liver-function tests were obtained in adequate numbers, and indicated that in addition to his cirrhosis he had active hepatocellular disease. His fluctuating icterus might indicate varying degress of biliary-radicle obstruction, as well as variations in the function of his hepatic cells. He could conjugate some bilirubin for excretion, but sometimes he couldn't conjugate enough. Of the bilirubin that he was able to conjugate, there were times when he couldn't excrete enough through his biliary tree. In short, this child had a continuing active liver disease process—a hepatitis, if you will.

The concept of smoldering hepatic infection, with periods of remission or subclinical activity, seems well established. Its relation to the so-called lupoid hepatitis or plasma-cell hepatitis is unclear, but this child doesn't fit the usual picture for plasma-cell hepatitis in children which we see most often in adolescent girls. However, the separation of postnecrotic cirrhosis, of plasma-cell hepatitis and of giant-cell hepatitis in infants is not clear, either clinically or histologically, and we should add the possibility of plasma cells and giant cells to the histologic picture we expect the autopsy to show us. If we had used immunochemical and fluorescent-antibody technics, we might have been able to demonstrate antibodies against the cells of his biliary canaliculi.

Before we move back to the time of the boy's birth, I should like to discuss one point about bilirubin values and the relation between direct or one-minute bilirubin and total bilirubin. The pitfalls of diazotization and resonant bonds were well organized by Ehrlich, in the 1880's, and again by van den Bergh in 1910 through 1915. As students, you should always be somewhat suspicious about the absolute values reported for total serum bilirubin, and about the absolute values reported for the compartmentations of direct and indirect components. The presence of elevated direct-acting bilirubin indicates only that conjugation of bilirubin or monoglucuronide bilirubin to diglucuronide bilirubin has been accomplished in the hepatic cells. The laboratory test done for direct bilirubin doesn't employ a catalyst to hasten diazotization, but relies on the more rapid reaction of the conjugated bilirubin with Ehrlich's reagent. It is time- and concentration-dependent, as we can see from the following simple physical-chemical considerations. The reaction is not a unimolecular one, and the differential equation that might approximate its characteristics would be

$$\frac{-dC}{dt} = kC_1C_2C_3 = kc^3.$$

Integrating such a differential equation would give us

$$k = \frac{1}{2t}\left(\frac{1}{C}\,2 - \frac{1}{C_o}\,2\right)$$

a function exponentially related to concentration, and linearly to time. The selection of a time of one minute on a rapidly changing portion of a curve is fraught with great danger. It makes me interpret the bilirubin values in this case as little more than a proof that while some hepatic conjugation could occur, it was often inadequate for the bilirubin load presented to the liver. Fluctuations in the absolute values reported may have been nothing more than laboratory artifacts.

Now, let's go back to the time of birth. What made this child's liver sick? It must have been something that affected both mother and child. The level of maternal jaundice would indicate this to me, since the hepatic reserve for bilirubin excretion in a normal adult is more than adequate to handle the bilirubin production of the fetus, even of one with fetal hemolytic disease. I feel we can exclude such causes of neonatal jaundice as erythroblastosis, septicemia, biliary atresia, or a hemolytic anemia not associated with antibodies transferred from the mother's circulation. We then are left with liver infection or a metabolic defect that could be shared by the mother and child. The subsequent clinical course makes a metabolic defect unlikely. The child was able to conjugate bilirubin—a fact which rules out the Crigler-Najjar syndrome, even if the mother had Gilbert's disease. Galactosemia is also unreasonable. The mother could well have suffered from the Dubin-Johnson syndrome, and there are many similarities between that entity in adults and the excretory problems with conjugated bilirubin which characterize some newborn infants. The old "inspissated bile syndrome" has not been discarded from our thoughts, but the focus of interest in this entity has shifted from the bile canaliculi to the permeability of hepatic cells for conjugated bilirubin.

Diamond has implicated drugs given to the mother, as a cause of maternal and fetal difficulties in bilirubin excretion. We have no information on medications given to this child's mother during these two pregnancies. Recently, the hormone pregnane-3-alpha, 20-beta diol has been shown to interfere with bilirubin conjugation in breast-fed infants. This steroid is present in increased amounts in some pregnant women and in their breast milk. Choledochal cysts could have occurred in both infant and mother. But all these theories fail to explain the subsequent course that the infant demonstrated—progressive cirrhosis, with persisting hepatocellular disease.

I am left with the concept that this mother had infectious hepatitis, and that she transmitted it to her children. Thus, we must conclude that the child we are discussing today had a continuing hepatitis, with resultant cirrhosis of the liver.

Both of the speakers who are to follow me, Dr. McKee and Dr. Hill, are better able to discuss these aspects of the problem than am I.

Dr. Dunphy: Dr. VanEpps, would you comment on the failure of the roentgenograms to demonstrate varices?

Dr. Eugene F. VanEpps, Radiology: In spite of special technics and care in doing esophagrams, varices are missed in about 20 per cent of cases studied. If the radiologist does more than one examination, the incidence of failure drops. Splenoportograms are of value in cases of portal hypertension from any cause. Varices are frequently demonstrated. The size of the portal vein and the demonstration of collaterals are valuable for the surgeon's assessment of the problem.

The roentgenograms that I have selected include visualizations of the coronary vein, gastric veins, esophageal varices, cavernomatous transformation at the hilum of the liver, rapid attenuation of the veins in the parenchyma of the liver (indicative of hypertension within the liver parenchyma), the size and position of the portal vein in this patient and the absence of the portal vein in severe cirrhosis.

As in all diseases, there are variations in degrees of involvement. In this patient, the portal and splenic veins were shown to be of sufficient size for the performance of a portocaval or splenorenal shunt.

Dr. Dunphy: Dr. Zimmerman, would you give us the pathology report?

Dr. George R. Zimmerman, Pathology: Of course this boy did have cirrhosis. He had a large liver (1,000 Gm.), and it was nodular. He died from massive gastrointestinal hemorrhage from esophageal varices. The exact site of bleeding wasn't found, but that sort of failure is not uncommon. The rupture is often tiny, and it contracts to a still smaller size after intraluminal pressure has been reduced.

The left renal vein was freshly thrombosed distal to the anastomosis. As one would expect, there were left renal infarcts. The fatal hemorrhage is assumed to have been related to reelevation of portal pressure following renal-vein thrombosis.

The gut in the distribution of the superior mesenteric artery was deeply congested. We can attribute this either to an increase in portal pressure or to shock or to both. There was other evidence of shock in that multiple pulmonary hemorrhages and moderate pulmonary edema were present. Shock is thought to have been due to blood loss.

The spleen removed at the time of the portorenal shunt procedure was enlarged and diffusely fibrotic. Natural portocaval shunts were noted at the time of operation. The cirrhosis was of the postnecrotic type. It was characterized by great variations in size of liver nodules (from several

millimeters to 3½ cm.), and by the presence of portions of relatively unaltered liver lobules. The scars contained recognizable remnants of liver lobules—i.e., portal spaces with bile ducts, central veins, etc. These features distinguish postnecrotic cirrhosis from portal cirrhosis. They suggest that in the past there had been necrosis of large areas of liver, rather than the microscopic foci of necrosis and relatively diffuse fibrosis of portal cirrhosis.

Postnecrotic cirrhosis may be due to a variety of causes, but in children with this youngster's history we consider two conditions. One is neonatal or giant-cell hepatitis. The other is viral hepatitis, either Type A or Type B (infectious hepatitis or serum hepatitis). How do we establish the precise cause of cirrhosis in a retrospective study? In 1961, the year of this boy's death, there wasn't any direct method for diagnosing the cause of this cirrhosis. We haven't enough serial biopsies from children with liver disease progressing to cirrhosis to enable us to make a statistical guess as to the probable cause. The approach that I have chosen is the one that Aterman used masterfully in a recent publication.* He holds the view that viral hepatitis, the usual type as we think of it in the adult, and giant-cell hepatitis are modifications of the same infection. He believes the infection is transmitted from the mother to the infant.

Typical viral hepatitis, the disease with a relatively brief and acute course, with jaundice and gradual recovery, is seen in both adults and children, though uncommonly in the latter. The morphologic changes in the liver also may be the same in adults and children.

Giant-cell hepatitis, conversely, is usually a disease of early infancy, but has also been seen in the adult. Again, the morphologic changes may be identical. Typically, the course of giant-cell hepatitis is protracted, and the illness is chronic. We have one case of a child with giant-cell hepatitis who was alive at 3½ years of age. In the adult, giant-cell hepatitis may be associated with a brief, acute clinical illness, but generally the manifestations of liver disease are present for months or years. Parenthetically, I might mention that infants with giant-cell hepatitis do die shortly after delivery, but their disease is well advanced at birth. Sometimes the infants have cirrhosis. Obviously, they could have acquired their disease *in utero*. These, in part, are Dr. Aterman's reasons for believing that giant-cell hepatitis is Type A or B viral hepatitis due to an altered virus or to a virus's behaving strangely in an environment that differs from the usual.

Either of these possibilities seems reasonable. Viruses certainly can be altered, and their environments can differ. Infants have immune mechanisms differing from those of the adult. There may be an effect from transplacental maternal antibodies. There is some evidence that liver-cell necrosis in the usual form of adult viral hepatitis is due to an autoimmune mechanism. Furthermore, giant cells have been described in "lupoid" hepatitis.

Aterman reports the case of a woman who developed viral hepatitis during her sixth pregnancy. (Her first five children were normal, or had died from unrelated causes.) Typical epidemic viral hepatitis was seen first in her 10-year-old daughter. The mother manifested the disease two weeks later, and two weeks after that, the father had an attack. There were several other cases among the family's acquaintances. The woman's sixth pregnancy resulted in a normal child. Three years later, she had a child with giant-cell hepatitis; three years later, a normal child; and two and one-half years after that, another child with giant-cell hepatitis. One need hardly point out the apparent similarity between that history and that of the family to which our patient belonged. Furthermore, there are a number of similar reports of jaundice in mothers and offspring. In our own small series of giant-cell hepatitis cases, there is one family with proved giant-cell hepatitis in two siblings and with a third sibling who was jaundiced for several weeks after birth. We have another situation in which an infant had giant-cell hepatitis, and his mother had received a blood transfusion during the sixth month of pregnancy but wasn't recognized as being jaundiced.

Stokes* took serum from an infant with giant-cell hepatitis and from its apparently healthy mother, and produced clinical and laboratory evidence of liver disease in volunteers. The details of that investigation haven't been published.

Thus far, I have implied that giant cells are seen only in the livers of patients with neonatal or suspected viral hepatitis. Giant cells have been described also in other diseases, including other viral diseases. However, they occur inconstantly and infrequently, and viral hepatitis can't, of course, be excluded. For this occasion, I wish arbitrarily to sidestep the controversy over the specificity of the multinucleated giant cells in the liver, and proceed to the next phase of my discussion.

In 1952 or 1953, Dr. Elizabeth Coffin, then in the U. of I. Department of Surgery, and I began a study of congenital biliary atresia. I first became aware then that giant cells occurred in the livers of younger infants with this condition. We then had 19 cases of proved biliary atresia. In 12 there were giant cells of the type seen in infants with giant-cell hepatitis (and with proved patent extrahepatic ducts). In six biliary-atresia cases

* Aterman, K.: Neonatal hepatitis and its relation to viral hepatitis of mother; review of problem. AM. J. DIS. CHILD., 105:395-416, (Apr.) 1963.

* Stokes, J., Jr., *et al.*: Viral hepatitis in newborn; clinical features, epidemiology and pathology. AM. J. DIS. CHILD., 82:213ff., (Aug.) 1951.

with giant cells, we had repeat liver biopsies, or one or more biopsies followed by autopsy. All six cases showed a reduction or a complete disappearance of giant cells in the later or latest liver sections. Four of the 19 cases had histories of jaundice in some other family member.

Biliary atresia, like giant-cell hepatitis, is reported at times as occurring in siblings. In one family of six children, three had common-duct atresia, and two others were jaundiced at birth. At operation, most of our cases of giant-cell hepatitis had "inspissated bile" in the major ducts. In our autopsy sections, there was ingrowth of granulation tissue (eventually mature scar tissue) into the bile casts in large ducts, and the process resembled the organization of a thrombus. This feature, and the fact that giant cells were common to both disorders naturally raised the possibility that these disorders might be closely and even causally related. In fact, some cases of biliary atresia are impossible to distinguish from giant-cell hepatitis on the basis of liver sections alone. Several other findings cast some doubt on the "congenital" nature of biliary atresia. For example, one of the infants in our series of biliary atresia didn't become jaundiced for a certain eight weeks and possibly for 12 weeks after birth. One of our infants is recorded as having passed meconium after delivery. There is a case report in the literature* dealing with a child who first developed jaundice at the age of three years. At age 19, operation disclosed a mass of scar tissue replacing the proximal common bile duct, and an absence of the distal segment.

Experimentally, after ligating the common bile ducts of newborn rabbits, one finds connective-tissue ingrowth into masses of inspissated bile in the intrahepatic ducts. As yet I have not demonstrated complete obliteration of the ducts, but the work isn't yet complete.

In summary, there is some evidence that congenital biliary atresia and giant-cell hepatitis in the infant may be related. There is some evidence that giant-cell hepatitis is related to viral hepatitis. If so, we may consider the cause of postnecrotic cirrhosis in the patient now under consideration as having been reasonably established.

Dr. McKee has done virologic studies on an infant with biliary atresia, proved at operation, and with prominent giant cells in the liver biopsy. His findings are apropos to this discussion.

Dr. Albert P. McKee, Microbiology: My first slide shows the results of our laboratory studies on this particular case. The entire period of time involved was about 89 days following the child's birth. There was a rise in the hemaglutination-inhibition titer against the Brown virus. That virus was isolated from epidemic hepatitis in Woodward, Iowa. Notice that the child does have a neutralizing titer of 1:32. This bears out the possibility that he may have received some antibodies from his mother, for he had this titer at a very early date—some 18 days after he was born. I should like to point out that a number of viruses—all of the herpes viruses and some others—can form giant cells such as have been shown by Dr. Zimmerman. I'd like also to point out that experimentally one can increase the tendency to produce giant cells by adding a little specific antibody to the virus in tissue culture. This appears to help select a mutant that tends to form giant cells, and the antibody apparently tends to foster this particular type of cell development.

Dr. Lee Forrest Hill: I should like to tell you a little bit about the protocols of three children in a single family, all of whom had hepatitis that they acquired at approximately six months of age. Their mother's first pregnancy ended in abortion after about five months, and I think that during that period she received one transfusion. The next child, K., is now nine years of age. He is very much like the patient whom we've discussed today. He had meningitis when he was four months of age. He was treated with antibiotics and had several transfusions. Two months afterward, he developed his jaundice, and I should have thought, at the time we first saw him, "Well, this is merely a case where serum hepatitis and cirrhosis resulted from a transfusion." He is a little subnormal mentally, perhaps as a result of his meningitis. We followed him, and did a biopsy a couple of years ago. It showed marked fibrosis around the liver lobules. So there is a boy of nine years who began his jaundice at around six months of age, following meningitis. He goes to school, and his jaundice fluctuates in severity. He has a fairly big liver, but he's getting along quite well.

The product of the mother's third pregnancy was L., who appeared to be normal until she was six months of age. Then she had a cold, and was observed to be jaundiced. We saw her when she was about three years of age. Then her liver was enormously enlarged. No biopsy had been done previously, and we thought one should be done. At biopsy, we found that she had a huge mass in her liver. She was operated upon and died shortly afterward, and an autopsy specimen of her liver showed a primary hepatoma in a cirrhotic liver. By the way, she had gallstones, and the previous boy had gallstones.

The fourth pregnancy produced a perfectly normal male. The next child is H., who is now about two years of age. I saw her from the time of her birth. She did very well for the first six months, gaining 15 or 16 lbs. and growing normally. When she reached about six months of age, however, the neighbors told her mother that the child looked jaundiced. I had seen her about a month earlier,

* Treves, F., in PRACTITIONER (London), 62 (N.F. ix) i, 18, 1899.

and had thought her perfectly well. But sure enough, she was jaundiced. At that time, we did some studies on that girl, and found that she had a big liver and spleen. Her bilirubin varied from 5.2 to 10.3 mg., total. I want to call your attention to the serum glutamic pyruvic transaminase. Here is an opportunity to observe one of these children in the acute phase of this disease. It was 430, and subsequently it went to 930, 515, 330 and 200. Those values pretty much resemble ones that you might see in a child with acute infectious hepatitis.

As I told you, I thought the first boy's liver disease could be explained on the basis of a transfusion-acquired virus. I thought perhaps that the second sibling just had a primary hepatoma and a cirrhosis resulting from it, rather than a primary hepatoma resulting from a cirrhosis. But when H. came along and developed hepatitis at six months of age, I was stopped rather cold. Why did these three children all develop hepatitis at about six months of age, and go on to cirrhosis?

Dr. McKee has done some work on these children, and I have his results here. He made the suggestion that perhaps the mother had some antibodies that protected these children for the first six months. When I saw Dr. Joseph Stokes recently, I told him about these children and said I thought serum hepatitis was pretty well ruled out because of the long incubation period—180 days. He said, "Oh no, that's all right."

So I'd like to discuss the etiological factor in children such as these and in the patient whom we have been discussing. As far as we know, there are three or four possible causes. One is serum hepatitis B, and another is infectious hepatitis A. There may be some unknown virus, and I think Hsia and some one of his associates have suggested there may be a genetic basis. The evidence for serum hepatitis, I think, is based entirely on what Dr. Stokes determined experimentally, and he is confident that it is one of the causes. When I talked with him, he said it had been proved. So far as I know, however, no one has duplicated Dr. Stokes' findings. Serum hepatitis virus is transmitted from the mother through the placenta to the infant.

A second possibility—infectious hepatitis A, which Atwater supported in the April, 1963, issue of the AMERICAN JOURNAL OF THE DISEASES OF CHILDREN—I think is still questionable. If we accept Janeway and Hsia's argument that after infectious hepatitis A in the mother, antibodies are formed that should pass through the placenta to protect the infant, one has to adopt some other hypothesis if we are to accept Atwater's claims that the virus of infectious hepatitis can persist in the mother for a number of years or perhaps for a lifetime, and be transmitted to the infant and produce hepatitis. I don't think this has been proved. He cites a tremendous amount of literature. For instance, in India, where hepatitis is apparently common, mothers have hepatitis and their infants also have hepatitis. There is a record of a woman who had five normal pregnancies, then got hepatitis from her 12-year-old child, and subsequently had two or three other children with neonatal hepatitis. That constitutes pretty strong evidence that the virus of infectious hepatitis can be transmitted to infants and produce neonatal hepatitis, but final proof probably is not yet available.

I'm fascinated by my three children. We have studied the mother. She had gallstones. The child who died had gallstones, the big boy has gallstones, and we even persuaded the mother to let us operate on her to remove her gallstones. I don't know the significance of the gallstones. There was no hemolytic anemia. We did a biopsy on the mother's liver, and it was entirely normal. For her sake, that is good, but I was in hopes that maybe she'd show a little hepatitis of some kind to add a bit to our understanding of what happened to her children.

Dr. McKee: Did the last of these Des Moines children have a transfusion?

Dr. Dunphy: No.

Unidentified Questioner: Has the mother had any subsequent pregnancies?

Dr. Dunphy: Dr. Hill says not, but that they are encouraging her.

Dr. Hans Zellweger, Pediatrics: Why is it, Dr. McKee, that the hepatitis virus remains active for much longer periods of time than other viruses?

Dr. McKee: Herpes has been studied in regard to its ability to persist in tissue culture and to cause infection in the presence of specific antibodies. It can happen, and these same virus particles are ones that apparently are very difficult to neutralize. They can move from cell to cell to form giant cells. Beyond that, I can't give you any concrete answer.

Dr. Henry E. Hamilton, Internal Medicine: On the basis of what has been presented here today, I believe one should counsel the family not to have more children.

Dr. Dunphy: Dr. Hill's "encouragement" was prompted by his curiosity, I think.

Dr. Carter would like to add to the general confusion by calling attention to a recent article.

Dr. Carter: I think we should mention a publication in the AMERICAN JOURNAL OF DISEASES OF CHILDREN in which a most unusual family was reported. Liver disease or gallbladder disease was very common in that family for three generations. I think almost 80 per cent of the children had jaundice, or evidence of hepatitis. It is possible that we are dealing with a "genetic" situation in this case, too. It also is possible that there is no relation whatsoever between the mother's jaundice and this child's course.

Dr. McKee: What do you mean when you use the term "genetic"? Do you refer to an alteration

in the capacity to produce interferon, in ability to produce acid-neutralizing antibody, or in what other propensity?

SUMMARY OF NECROPSY FINDINGS

1. Cirrhosis, postnecrotic type, with icterus.
2. Esophageal varices, with massive recent hemorrhage.
3. Splenomegaly and splenic fibrosis.
4. Portal-renal vein anastomosis.
5. Left renal vein thrombosis, recent.
6. Infarction, left kidney, recent.
7. Multiple small pulmonary hemorrhages and moderate pulmonary edema consistent with shock.

STUDENTS' DIAGNOSES

Cirrhosis of the liver due to viral hepatitis.

Massive gastrointestinal-tract hemorrhage.

Possible thrombosis or kinking of the splenorenal shunt.

DR. CARTER'S DIAGNOSES

Cirrhosis of the liver with hepatitis, resulting in portal hypertension.

Splenomegaly, with hypersplenism.

Irreversible shock from massive hemorrhage due to esophageal varices.

E. coli septicemia.

American Proctologic Society

Leamington Hotel, Minneapolis
(open to all physicians)

Monday, June 14, 1965

10:30 a.m. "Conservative Management of Fissure—in Ano"—R. K. Menda, M.D., Bombay
"Primary Fistulectomy for Anorectal Abscesses: Clinical Study of 500 Cases"—J. W. McElwain, M.D., Richard M. Alexander, M.D., and M. D. MacLean, M.D., of New York State
"Horseshoe Fistula"—Patrick H. Hanley, M.D., New Orleans
"Local Anesthesia in Anorectal Surgery"—G. L. Kratzer, M.D., Allentown, Pa.
"Anal Pathology in Regional Enteritis"—H. E. Lockhart-Mummery, M.D., London
"Anorectal Lesions Associated With Granulomatous Colitis"—Harry Marganoff, M.D., Patchogue, N. Y.
"Gastrointestinal Complications of the Leukemias"—David Segal, M.D., Minneapolis, and W. C. Bernstein, M.D., St. Paul
"Perianal Skin Amebiasis"—Fidel Ruiz-Moreno, M.D., Mexico City
"The Camera Looks at Ulcerative Colitis"—F. L. Weakley, M.D., Cleveland

2:00 p.m. "Diagnosis and Treatment of Polypoid Lesions of the Colon and Rectum"—Walter Hamilton, M.D., Columbus
"Intrarectal Resection of Villous Adenoma"—Ralph Sampson, M.D., Columbus, and Carlos Andarsio, M.D., Springfield, O.
"Is Long-Term Follow-Up of Rectal and Rectosigmoid Polyps Necessary?"—A. T. Hudson, M.D., and J. P. Muldoon, M.D., Grand Rapids
"Colonic Polyps and Metachronous Carcinoma"—Martin Adson, M.D., Rochester, Minnesota
"Chemotherapy for Cancer of the Colon and Rectum"—B. J. Kennedy, M.D., Minneapolis

3:30 p.m. SYMPOSIUM: COMPLICATIONS OF ANORECTAL SURGERY—CAUSE AND TREATMENT

Tuesday, June 15, 1695

8:30 a.m. "The Physiologic Rationale of Anorectal Medication"—E. H. Flentie, M.D., Pasadena
"Primary Pruritis Ani"—J. H. Heslop, M.D., Dunedin, New Zealand
"The Psychological Aspects of Proctalgia Fugax"—L. F. Pilling, M.D., Rochester, Minn.
"Anal Incontinence"—Nigel Porter, M.D., Henfield, Sussex, England
"Peroral Small Intestine Biopsy"—James McPherson, M.D., Rochester, Minn.
"Cloacogenic Cancer of the Anus"—P. K. Cullen, Jr., M.D., Indianapolis
"Cardiac Arrest and Resuscitation"—B. A. Portin, M.D., and W. H. Bernhoft, M.D., Buffalo
"The Joseph M. Mathews Oration"—Hyrum R. Reichman, M.D., Salt Lake City

10:30 a.m. SYMPOSIUM: COLONIC AND INTESTINAL FISTULAE

2:00 p.m. "Experience With an Indwelling Anorectal Catheter for Decompression Across New Colonic Anastomotic Sites"—F. J. Rack, M.D., Cleveland
"Surgical Management of Ulcerative Colitis"—C. A. V. Burt, M.D., New York City
"Groin Hernia Repair Incidental to Colon Surgery"—I. R. Block, M.D., Forest Hills, N. Y.
"Osseous Metastases From Cancer of the Large Bowel"—S. D. Weston, M.D., and H. L. Feit, M.D., Brooklyn
"Complicated Para-anal Fistulae of Obscure Etiology"—J. R. Heaton, M.D., and R. S. Cohen, M.D., Grand Rapids
"Etiology and Surgical Care of Massive Rectal Prolapse"—C. B. Ripstein, M.D., Brooklyn

3:30 p.m. SYMPOSIUM: ANAL MALIGNANT LESIONS

Wednesday, June 16, 1965

8:30 a.m. SYMPOSIUM: "HOW I DO IT" SURGERY FOR CANCER OF THE RECTUM

10:30 a.m. SYMPOSIUM: COLON AND RECTAL SURGERY IN RELATIONSHIP TO SURGICAL PROGRAMS OF MEDICAL SCHOOLS AND HOSPITALS

1:30 p.m. DISCUSSION COURSES—1ST SESSION
1. "Hemorrhoids"
2. "Fissure, Abscess and Fistula"
3. "The Controversy Over Rectal and Colonic Polyps and Cancer"
4. "Pruritis Ani"
5. "Electrolyte Problems and Steroid Therapy in Surgery"
6. "Chronic Ulcerative Colitis"
7. "Rectal Prolapse"
8. "Wound Dehiscence and Evisceration"

2:45 p.m. DISCUSSION COURSES—REPEATED

Editorials

NONUNION OF FRACTURES

In a paper on "Healing of Fractures and Nonunion of Bone,"* Dr. Edwin French Cave, chief emeritus of the fracture service at Massachusetts General Hospital, asserts that despite the fact that knowledge regarding the diagnosis and management of fractures has improved tremendously since the beginning of this century, nonunion of fractures actually is on the increase. Nonunion is more common, he says, because more fractures are being operated upon, because cases for operation are improperly selected, because poor operative technic is employed, and because improper and inadequate postoperative care is prevalent.

Textbooks may list many causes for the delayed union or nonunion of bone, but Dr. Cave emphasizes that from a practical point of view there are only three of them: (1) Failure of reduction of the fracture. (2) Failure of adequate, uninterrupted immobilization, either by external or by internal means. (3) The surgeon himself.

To substantiate his assertion, Dr. Cave lists the causes for delayed union or nonunion in a series of 180 cases—six with delayed union and 174 with frank nonunion. Improper operative interference was the most common cause of nonunion in closed fractures, and next to bone loss, it was the most frequent cause in open-fracture cases. The causes of nonunion in the 180 fractures were listed as follows:

Operative interference	70
Inadequate external fixation	24
Operation and infection	20
Distraction	18
Faulty closed reduction and fixation	17
Bone loss	10
Too early weight bearing	6
Interposed soft tissue	6
Soft-tissue trauma	6
Metabolic bone change	3
	180

Of the 174 cases of nonunion, 69 followed open fractures and 105 followed closed fractures. Forty-two of these were fractures of the femur, 33 of which were closed and nine open; 106 were fractures of the tibia, 52 closed and 54 open. Surprisingly, there were only 10 fractures of the humerus, and only one of those was an open fracture. There were four ununited fractures of the clavicle, and 12 involving the radius or ulna or both.

Dr. Cave emphasizes the following principles in the management of fractures:

1. A closed fracture must not be opened if there is a reasonable chance of promoting healing by the use of closed methods of treatment.
2. Closed reductions should be tried in all fractures of long bones.
3. If closed reduction is employed, external fixation must be efficient and prolonged.
4. If open treatment is necessary, adequate incisions are essential. Gentle stripping of the periosteum does not interfere with healing. The fracture must be anatomically reduced. If metal materials are used, they must be applied properly.
5. External fixation must be prolonged. Too early removal of external fixation and too early weight bearing are common causes of nonunion.
6. When it is established that nonunion is present, there is no excuse for delay in the surgical attack. The sooner operation and bone grafting are carried out, the better.

* Cave, E. F.: Healing of fractures and nonunion of bone. RHODE ISLAND M. J., **47**:77-85, (Feb.) 1965.

PREGNANCY IN THE DIABETIC PATIENT

A report on the management of pregnancy complicated by diabetes, from the Royal Maternity Hospital, Belfast, covering the eight-year period from January, 1956, to December, 1963, is a valuable addition to the literature on this difficult problem.*

Harley and Montgomery relate the experience with 80 diabetic patients who had a total of 113 pregnancies. In that group of 80 women, 55 had one pregnancy each; 17 had two pregnancies each; and eight had three pregnancies each. During the eight-year period, some 17,000 patients were delivered at the hospital, and thus the 80 diabetic patients contributed 0.66 per cent of the total number of deliveries. Forty per cent had been under 20 years of age when the diagnosis of diabetes was made; 57.5 per cent had been 20 years of age or older, and in two women the age at onset was unknown. The duration of diabetes was 10 years or less in 53.9 per cent of the patients, and over 10 years in 39.8 per cent. In five patients the diagnosis had first been made during pregnancy and confirmed after delivery, and in two patients the duration was unknown.

Patients in this group were seen at intervals of two weeks during pregnancy, or more often

* Harley, J. M. G., and Montgomery, D. A. D.: Management of pregnancy complicated by diabetes. BRITISH M. J., **1**:14-18, (Jan. 2) 1965.

Editorials continued...

when indicated. At each visit, blood-glucose levels at 11:00 to 11:30 a.m. and at 8:30 to 9:00 p.m. were available to the clinician. Each patient brought a record of urine tests for glucose and acetone (fasting and before meals) for the week preceding her visit to the clinic. In assessing the control of the diabetes, the clinicians considered it good if the three-hour-postprandial glucose levels were 150 mg./100. ml. or less, and if the hypoglycemic reactions were infrequent. Blood-glucose levels of 151 to 200 mg./100 ml. were regarded as fair, and those above 200 mg./100 ml. were classified as poor. In assessing the control of the diabetes, they ignored the degree of glycosuria because of the effect of pregnancy on the excretion of glucose by the kidney. In 101 of the total of 113 pregnancies, the diabetes was treated with insulin, and 69 of those had good control; 21 had fair control; and seven had poor control. In four patients, the control was considered uncertain. Eight patients treated by diet alone and two patients treated with chlorpropamide were well controlled. Two patients untreated during pregnancy were admitted as emergency cases and were in poor control.

There were no maternal deaths in the 113 diabetic pregnancies. There were two sets of twins, making the total number of fetuses 115. The total fetal loss was 19 (16.5 per cent). The pregnancy terminated in miscarriage in six patients. Thus, of 109 viable fetuses, there were 13 that died, for a perinatal mortality of 11.9 per cent. This is in contrast to a fetal mortality of 27.2 per cent in 114 viable pregnancies in diabetic women at the same hospital during the 15 years from 1940 to 1955.

In the group of 80 women, 33 were primiparas. Among them, one pregnancy terminated in miscarriage and five viable babies were lost, for a perinatal mortality of 15.1 per cent. Among the 47 multiparas, five pregnancies ended in miscarriage and eight viable babies were lost, for a perinatal mortality of 10.5 per cent. The results demonstrated that the better the diabetic control the better the outlook for the fetus, in that the perinatal mortality was significantly less in the well-controlled group.

Surprisingly, polyhydramnios was present in slightly over half of the 80 patients. Evidence of preeclampsia was found in 40 pregnancies. The criterion adopted for this diagnosis was the presence of two or more of the following signs: hypertension, edema and proteinuria. If one excluded six patients in whom pregnancy terminated in miscarriage, the incidence of preeclampsia was 37.3 per cent. In the 40 pregnancies with preeclampsia, there were two stillbirths and five neonatal deaths, for a perinatal mortality of 17.5 per cent. By contrast, in 67 pregnancies not complicated by preeclampsia, the perinatal mortality was 8.7 per cent. The difference shows dramatically the serious effect that toxemia has on the perinatal mortality in diabetic pregnancies.

In eight of the patients, pulmonary tuberculosis was a complication of pregnancy. Following hospital treatment, the disease was considered healed in five patients, and in three the lesions were still active.

Fetal abnormalities were present in five of the viable babies. Two had congenital heart lesions; two had hydrocephalus; and one lacked one of its kidneys and succumbed within 48 hrs. after delivery.

There was one case of ruptured uterus in a patient who had been admitted as an emergency, in labor. Rupture was attributed to disproportion, inasmuch as the baby weighed almost 10 lbs.

According to the authors, much of the credit for the improved perinatal mortality was due to stricter antenatal supervision of the pregnant diabetics and more adequate control of the diabetes. The management of these patients should be directed primarily toward those goals. Antenatal visits, combined with supervision of the diabetes, should be carried out at intervals of two weeks, or more often if necessary. If, at any time, stabilization of the diabetes is unsatisfactory, immediate hospitalization is advisable. In the Belfast study, it was found difficult to control diabetes by a single morning injection of medium- or long-acting insulin, whether given alone or in combination with a dose of regular insulin. The authors preferred either regular insulin twice daily, or a medium-acting insulin given twice daily, or administered alone in the morning and supplemented with regular insulin in the evening. By this means it was found that better and smoother control was obtained with a smaller daily dose of insulin.

In the present series, one-third of the total fetal loss was due to miscarriage. Though it is difficult to ascribe that outcome to any one cause, it is thought that poor control of the diabetes may have been responsible for some of the deaths. By seeing these patients earlier in pregnancy and improving their diabetic management, it is hoped that physicians can further reduce the incidence of miscarriage.

In the management of this group of patients, it was routine to admit them to the hospital approximately four weeks before the proposed date of delivery—i.e., at about the 32nd week of gestation. Fifty-four per cent of the patients were admitted before 34 weeks, and the perinatal mortality for that group was 9.8 per cent. The perinatal loss for those admitted after 34 weeks was 14.6 per cent. The importance of admitting the patients to the hospital at the 32nd week was emphasized. It permits better control of the diabetes and an earlier recognition and prompt treatment of preeclampsia,

both of which are associated with an increased fetal mortality.

Although premature delivery at 35 weeks or earlier increased to 39 per cent in the more recent Belfast series, as contrasted with 13 per cent in the patients cared for there between 1940 and 1955, the authors emphasize that the time of delivery must be decided carefully, after one has weighed the risk of intrauterine death against the risk of death from prematurity. The actual maturity at which delivery should take place depends upon the presence of factors that increase the hazard of intrauterine death of the fetus, and it is only after careful consideration of these in the individual patient that a proper decision can be made. The most important factors to be weighed are the severity of the diabetes, whether the diabetes is under strict control, the previous obstetric history of the patient, the presence of preeclampsia, the degree of polyhydramnios, the size of the baby, a consistently low output of urinary estradiol, and any evidence of placental insufficiency. Delivery at 35 weeks or earlier is rarely necessary, and should not be attempted except for very definite indications. A severe diabetic who is difficult to control and in whom there is evidence of preeclampsia or increasing polyhydramnios prompts serious consideration of delivery at 36 or 37 weeks.

After making the decision concerning the maturity at which the individual diabetic patient should be delivered, the obstetrician must decide which method of delivery is best for her. In the present series of 80 patients, cesarean section was employed in 66.3 per cent, in contrast to a rate of 55 per cent during the previous 15 years in the same hospital. During the 1955-1963 period, in which two-thirds of the patients were delivered by cesarean section, 33 patients were primigravidas and 28 of them were delivered by cesarean section. Despite the high incidence of cesarean section, the authors assert, "We consider that a medical, followed if necessary by a surgical induction of labour should be attempted both in primigravidae and in multigravidae, provided there are no contraindications such as disproportion or poor control of maternal diabetes. If labour has not begun within 12 hours, or if labour is not progressing satisfactorily, the delivery by cesarean section should be carried out."

The authors emphasize that whether or not the baby of a diabetic mother survives will depend to a large degree on expert care by pediatricians and a nursing staff in a premature nursing unit with experience in dealing with babies of diabetic mothers. They point out that the prognosis in these infants must be guarded, and until a week has passed, the outlook for such an infant is uncertain. They urge that these mothers be prepared for this period of uncertainty, and that tact, sympathy and encouragement be given them during this period of waiting.

A THEORY ABOUT THE ENDEMIC CHARACTER OF CHICKENPOX

A 16-year study of all the cases of herpes zoster that occurred in Cirencester, England, in a practice encompassing some 3,500 people, is reported by Hope-Simpson in a recent issue of the PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE.* According to him, herpes zoster is an unusually interesting disease because it appears unexpectedly, and though a doctor has no difficulty in recognizing it—a rare satisfaction for him—he has extreme difficulty in accounting for its occurrence. The study was undertaken in the hope that the natural history of the disease, as it occurred in an unselected population, would shed light upon the true nature of the infection. As a consequence of his work, Hope-Simpson evolved a hypothesis that should be of interest to every physician who cares for patients with the disease.

Numerous studies have contributed to knowledge concerning herpes zoster. Richard Bright, in 1831, pointed out the segmental distribution of the rash, but it wasn't until the middle of the nineteenth century that pathologic changes in the posterior root ganglion and the sensory nerve were demonstrated at autopsy. Head and Campbell, in 1900, reported in detail on 20 patients who had suffered from herpes zoster, and from their study mapped the sensory areas related to each of the ganglia.

Several studies have reported the association of herpes zoster and varicella, first noted in 1888 and subsequently confirmed by various observers. Later it was shown that children inoculated with fluid from a zoster vesicle might develop varicella and transmit the disease to their uninoculated peers. However, inoculation of children who had histories of having had varicella was unsuccessful. The relationship of herpes virus and varicella virus was finally clarified when varicella virus was grown in tissue culture and it was demonstrated that the virus was the same, whether it came from a case of varicella or from a case of zoster.

If varicella is a specific infectious disease like measles or mumps, and is caused by the varicella virus, Dr. Hope-Simpson asks, how can herpes zoster be caused by the same virus? Some clinicians have considered it an alternative acute infectious disease. If this hypothesis were true, there then would be two ways in which the disease might be acquired, first by contact with a patient with varicella, and second from contact with another case of zoster. Another hypothesis is that herpes zoster is not an infectious disease acquired by contact with another person, but is due to a reactivation of a latent virus that has been dor-

* Hope-Simpson, R. E.: Nature of herpes zoster: long-term study and new hypothesis. PROCEEDINGS ROYAL SOC. MED., 58:9-20, (Jan.) 1965.

Editorials continued...

mant, perhaps for many years, since an original attack of varicella.

The British practitioner states that he and his partner saw all of the cases of herpes zoster in their practice of 3,500 patients, during the period of the study. In the course of 16 years, 1947-1962, there were 192 cases of zoster, or an annual average of 3.4 cases per 1,000 persons. No significant seasonal variations occurred, and the disease was identified in all of the months of the year. The maximum number of cases in any one month was four—in the month of July. Over the whole period of 16 years, the number of cases remained about the same, averaging 12 annually. That distribution militated against the concept that zoster occurs in epidemics, or that the disease is transmitted directly from a patient with the infection. Among 318 domiciliary contacts of the 129 patients with the disease, there were no secondary cases seen or reported—a fact which negated the concept that herpes zoster is a transmissible disease.

As Hope-Simpson points out, if zoster is not caught from another patient with zoster, but is caught from a patient with varicella, then cases of herpes zoster should be abundant during the time when varicella is epidemic. During the 16-year period of the study, there were four distinct epidemics of varicella with more than 100 cases, and during those years the incidence of zoster was low. Thus, he says, the idea that persons with varicella can infect those around them with the virus and give them attacks of zoster can be dismissed with confidence. There may even be a possibility that such an exposure can enhance one's protection against zoster. In his study there were 1,287 household contacts of patients with varicella, and none of them developed zoster. Thus, it may be concluded that contact with zoster in appropriate persons may cause varicella, but not *vice versa.*

Although his study provides evidence indicating that herpes zoster is not a transmissible disease and that it does not result from exposure to a patient with varicella, Hope-Simpson asserts that it is necessary to exercise caution in dismissing these possibilities altogether. Rare exceptions cannot be completely disregarded, but these uncommon occurrences are no basis for a general hypothesis concerning the etiology of herpes zoster.

He supports the hypothesis of virus latency, which is the most widely accepted concept at the present time. Following a primary infection with varicella, according to that theory, the patient retains the latent virus in his sensory ganglia, perhaps for many, many years, and then for some inexplicable reason it becomes reactivated and causes the disease herpes zoster. This concept of latency of the virus supports the thesis of biologic adaptation which enables varicella virus to survive over long periods of time, even in the absence of large numbers of susceptibles. Upon reactivation of the virus, the patient with clinical zoster transmits the virus to susceptibles, who then come down with chickenpox.

The following lucid paragraph summates his theory regarding the latency of the virus: "How can we explain the paradox that the host-parasite interaction that we call varicella could not by itself have secured the survival of the virus and yet the varicella virus is still with us? There must be some additional mechanism of virus survival, and surely in zoster we have just such an adaptation. During the attack of varicella, the virus is not only shed to start an immediate new cycle, but also goes to ground in a state of latency in each human host. Biologically the latent state is useless to virus survival unless, sooner or later, reactivation takes place, and the virus once again reaches the general environment of the host. The attack of zoster is surely the missing piece of the puzzle. The neolithic human communities, cut off from frequent intercourse with another, would produce in 20 to 30 years a new generation susceptible to attack by the varicella virus. One of the older members of the group would develop herpes zoster and so provide infectious virus to start the little outbreak of varicella from which the new generation would receive, in turn, the latent parasites. Indeed in just this way varicella virus still secures survival in remote island communities. Zoster must, therefore, be regarded as an integral part of the host-parasite relationship, a secondary or tertiary stage of varicella virus infection."

Though it may give little comfort to the octogenarian suffering from "shingles" to know that he is fulfilling a biologic role in perpetuating the virus which causes a childhood disease, it will give him some insight into nature's complex mechanisms.

TRACHEOTOMY

In a recent article entitled "The Modern Application of Tracheostomy," Lambert, of the Manchester Royal Infirmary,* has told of one week in which 14 tracheotomies were performed in the various departments of his hospital—none of which were done for laryngeal obstruction. The changing applications of tracheotomy are demonstrated by the fact that those 14 were done for a variety of conditions—tetanus, severe head and facial injuries, severe chest trauma, myasthenia gravis, and cor pulmonale which resulted from an acute exacerbation of chronic bronchitis with emphysema.

In a brief history of the operation, Lambert

* Lambert, V.: Modern application of tracheostomy. BRITISH M. J., 1:143-147, (Jan. 16) 1965.

points out that in its simple, original form, tracheotomy was only a means of rerouting the inspired air normally taken into the body through the nose, in order to bypass an obstruction at or about the level of the larynx. The operation was performed as a last dramatic effort to save life in a grave emergency. Chevalier Jackson is credited wth correcting this false practice, and it was he who emphasized that tracheotomy was usually carried out too late to benefit the patient.

Lambert points out that the problems of mechanical obstruction of the airway are insignificant as compared with those that result from secretory obstruction to ventilation. It is the wide variety of causes of ventilatory obstruction of the lower respiratory tract which account for the widening use of tracheotomy, and its use in conjunction with artificial respiration and aspiration of the bronchial tree. Credit for the proper understanding of the disturbed physiology in non-obstructive ventilatory disturbances is given to Galloway, in this country, and to Professor Lassen, in Denmark, as a result of their contributions to the management of poliomyelitis.

He calls attention to the fact that in addition to the movement of air toward the alveoli, there is a movement of air and of normal secretions of the mucous glands of the trachea and bronchi in the opposite direction. Normally these secretions are carried to the larynx by ciliary action, or if they are excessive, the ciliary activity is supplemented by the contraction of the smooth muscle and the elastic tissue in the walls of the alveoli and bronchi. Secretions are finally expelled through the larynx by coughing. The tussive squeeze by the lung tissue and the expulsive cough occur as a result of afferent impulses transmitted by the vagus nerve to respiratory centers in the medulla and pons. When the fluid content increases, or the secretion becomes especially viscid, the normal physiologic pattern for their removal may fail. Also, should the normal nervous and muscular mechanisms of breathing be disturbed, secretions accumulate in the lower respiratory tract. The accumulation of secretions interfere with the proper interchange of oxygen and carbon dioxide in the pulmonary alveoli.

Ventilatory failure produces (1) *hypoxia,* or a shortage of oxygen in the blood; and (2) *hypercapnia,* or an excessive concentration of carbon dioxide in the blood, resulting in acidosis. These changes result in the pathologic and clinical state that is recognized as *asphyxia.* As a consequence of hypoxia, there is an increased capillary permeability that results in pulmonary edema. With hypoxia, capillary permeability may occur in other tissues of the body, particularly in the brain and the myocardium. The toxic effect of acidosis due to increased carbon dioxide is made even worse by the formation of lactic acid in the tissues because of a lack of sufficient oxygen.

The symptoms of hypercapnia are headache, restlessness, unresponsiveness, disorientation, and finally narcosis, respiratory depression and circulatory failure. The patient's life depends upon the prompt recognition of these symptoms and the prompt institution of measures to correct them. Lambert asserts that perhaps the most important single step in treatment is the performance of a tracheotomy. A common mistake is to await the onset of cyanosis before doing a tracheotomy. Nothing is to be gained by doing the operation after cellular damage is irreversible.

After the performance of the tracheotomy, aspiration of secretions from the lower bronchial tree may be immediately necessary. The lessons learned from the management of poliomyelitis were that death results, in that disease, not so much from virus involvement of the brain stem as from ventilatory failure. Though there may be damage to the reflex mechanism that initiates and controls breathing, the basic difficulty is the accumulation of secretions in the lower respiratory tract and their interfering with efficient alveolar ventilation.

Lambert emphasizes that before one can understand the application of tracheotomy to ventilatory failure, one must have a basic knowledge of the physiology of respiration. He points out the importance of the larynx in relation to the lower respiratory airway, in that it acts as a sphincter muscle, and that this sphincter action is its most important function, despite the ultimate use of the larynx in speech. Without the action of the larynx, saliva, nasal secretions, vomitus, etc. would invade the lower respiratory tract.

Lambert then points out that the flow of air into and out of the lungs is the result of changes in the capacity of the chest cavity, and that these changes in capacity occur as a consequence of the expansion and contraction of the chest wall. The movement of air in or out of the lung is governed by the difference in pressure between the outside air and the air in the lungs. When the intrathoracic pressure is greater than the surrounding atmospheric pressure, expiration occurs, and when the reverse is true, inspiration takes place. For the most part, expiration is a passive function, except under special circumstances such as coughing. On the other hand, inspiration is an active process. An increase in the cubic capacity of the chest cavity is brought about by a forward movement of the anterior chest wall. The forward movement of the sternum is due to a lifting and rotation of the ribs, brought about by a contraction of the intercostal muscles.

Most of us were taught that respiration was controlled by a respiratory center in the medulla. Lambert brings out the fact that it is now recognized that there are three centers in the brain that are related to breathing. The *inspiratory center* is located in the medulla, is the most active

Editorials continued...

of the three centers, and controls the function of the chest muscles. The *expiratory center* is also located in the medulla, and when stimulated it causes forced expiration and also acts as an inhibitor of the inspiratory center. In addition to those two centers in the medulla, there is a *pneumotaxic center* in the pons, which is concerned with expiration. Its impulses are sent to the expiratory center in the medulla, but both of these centers appear to be concerned chiefly with inhibiting the inspiratory center. In addition, inhibitory stimuli are created by stretching the lung and are transmitted by the vagus nerve to the medullary centers.

The respiratory centers are sensitive to the carbon dioxide tension and the pH of the blood. The chemoreceptors in the carotid and aortic bodies are sensitive to oxygen tension. Thus any condition which interferes with the normal diffusion of oxygen and CO_2 in the alveolar air can cause marked alterations in the rate and depth of breathing, and by secondary changes in the body chemistry, can have a serious impact upon the respiratory centers, possibly bringing about their ultimate failure.

Lambert concludes that though tracheotomy isn't completely without danger, it may be life-saving in the management of patients with brain injury or brain disease, in patients suffering from coma from any source, and in patients with chest injuries. Any condition that disturbs normal respiratory physiology and causes an increase of secretions in the lower respiratory tract may be an indication for tracheotomy. A patient who is unable to cough is in a vulnerable state.

Diagnosis and Treatment of Cancer

A symposium on recent advances in the diagnosis and treatment of cancer will be presented at Iowa Lutheran Hospital, Des Moines, June 12, under the joint sponsorship of the American Cancer Society, Iowa Division, Inc., Charles Pfizer & Company, and the medical staff of the Hospital. The scientific program beginning at 9 o'clock, will occupy both the morning and the afternoon, and there will be an evening banquet at Hotel Savery.

Topics to be discussed include skin cancer, cancer of the gastrointestinal and genitourinary tracts, and the leukemias. The guest-speaker list was incomplete as the JOURNAL went to press, but it already included Peter Rosi, M.D., professor of surgery at the University of Illinois; Henry Waite, M.D., a professor at the L.S.U. College of Medicine and a chief of staff at the USPHS installation in New Orleans; William Bliss, M.D., an Ames surgeon; and Sophocles Marti, M.D., of the Park Clinic, Mason City. In addition, several members of the Iowa Lutheran Hospital staff will participate.

Some tours and a fashion show are being arranged for the wives of physicians attending the symposium, and, of course, they will be welcomed at the banquet along with their husbands.

For further information and advance registration, doctors are asked to write Robert W. Hoffmann, M.D., symposium chairman, Iowa Lutheran Hospital, Des Moines 50316.

Highlights of AMA Convention

New York City, June 20-24

Between 25,000 and 30,000 physicians are expected at the 114th annual convention of the American Medical Association, in New York City, June 20-24. When the AMA last met in New York City, in June, 1961, the total physician registration was 23,083.

J. Arnold Bargen, M.D., of Temple, Texas, chairman of the Council on Postgraduate Programs, says that the New York City program will be most comprehensive, including lectures, scientific exhibits, preview showings of medical films, and color television. There will be six general scientific meetings at the New York convention, offering physicians the most recent findings in adverse drug reactions; organ transplantation; hearing; non-narcotic drug addiction; metabolism in growth development and aging; and diagnostic cytology.

The convention will center at the New York Coliseum, at Columbus Circle, adjoining Central Park, which also housed the 1961 annual convention. However even that huge building cannot contain all of the scientific meetings, and some will overflow into hotels in the midtown area.

The complete program of the convention will be published in the May 10 issue of JAMA.

Twenty-three specialty sections also will have programs, in addition to the six general scientific meetings. One of the 23 is the newly-established section on allergy.

The New York World's Fair has been widely publicized throughout the United States and in the rest of the world. Many physicians both from this nation and other lands look to the June AMA convention as an opportunity to combine a visit to the World's Fair and intensive postgraduate study.

Physicians' wives—whether members of local and state Auxiliaries or not—will be welcomed at the 42nd annual convention of the Woman's Auxiliary to the American Medical Association, which is to coincide with the AMA meeting and which will be held at the Americana Hotel. Achievement awards for outstanding community-service projects, a luncheon honoring leaders of national women's voluntary organizations, and an address by Mr. Harold Russell, chairman of the President's Committee for Employment of the Handicapped, will be features of the ladies' program.

Events are being planned not only for physicians and physicians' wives, but also for physicians' grown children. As in former years, a special program is being planned for teenagers.

New Psychiatric Wing at a Des Moines Hospital

"Hope that is deferred afflicteth the heart: desire when it cometh is a tree of life. PROVERBS 13:12." That quotation, which captions the mural by artist Stan Hess, symbolizes both hope for the ill and the growth of the Iowa Lutheran Hospital, in Des Moines. The new $2.6 million mental health wing, which was dedicated March 28, is the fifth addition to the original Iowa Lutheran Hospital, built in 1914.

The Hess mural is located in what will eventually be the main lobby of the hospital, and its colors—red, gold, green, blue, beige and brown—are reflected in the furnishings throughout the lounges and bedrooms of the new psychiatric section.

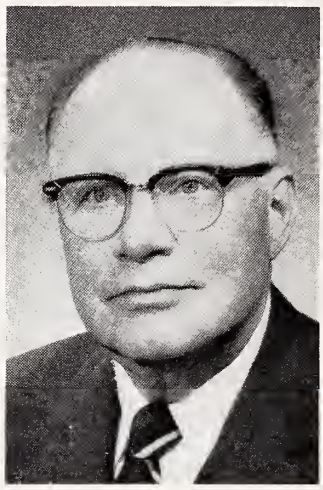
The pleasant, motel-like bedrooms, says Mr. F. A. Hanson, administrator of Iowa Lutheran Hospital, are "only for sleeping." There are "lots of other places" for a patient to be, he points out. A terrace court on the north side of the building has a golf putting green, a badminton court, and a barbecue pit. In an exercise room there are all kinds of equipment for therapy, recreation or both: bicycle exercisers, parallel bars, dumbbells, weight-pullers, etc. There is a barber shop, a beauty shop, a library, a music room, a photographic dark room, and a circular meditation room. In the occupational therapy room, cabinets are filled with tools and materials for ceramics, leather work, and painting.

The wing was laid out to provide the most efficient, advanced use of hydrotherapy, electric shock and other psychiatric treatment procedures.

On April 1 the first patients were moved into the new wing—40 patients from Hillcrest Hospital, a private hospital in Des Moines, which will be closed. Dr. H. C. Merillat, Hillcrest's medical director, will be chief of psychiatry on the Iowa Lutheran Hospital staff.

Speaker at the dedication ceremonies was Dr. Paul Huston, head of the Department of Psychiatry, U. of I. College of Medicine. Rev. Dr. Raynold J. Lingwall, president of the Iowa Synod, Lutheran Church in America, conducted the rite of dedication.

President's Page



The coming year, no doubt, will present new challenges and problems for us to face, in addition to the task of completing programs already started.

As a result of long hours of study and hard work on the part of the staff and the officers and committees of the Society, the usual and customary fee concept is a reality. Commercial insurance carriers are now writing group policies in the state, based on the usual and customary fee concept.

To prove that this philosophy is right, and to perpetuate it, every physician in Iowa will need to bill in accordance with the arrangements that have been negotiated by the Iowa Medical Society.

It is likewise the duty of every constituent society to have a strong fee-evaluation committee to offer its assistance if an occasion for arbitration arises.

Regardless of whom we negotiate with, now or in the future, we must stand firm on this concept.

If each and every man does his part, we have nothing to fear for the image of our profession, which our adversaries have done their best to damage. When we follow the true dictates of our consciences, no honest man can criticize us.

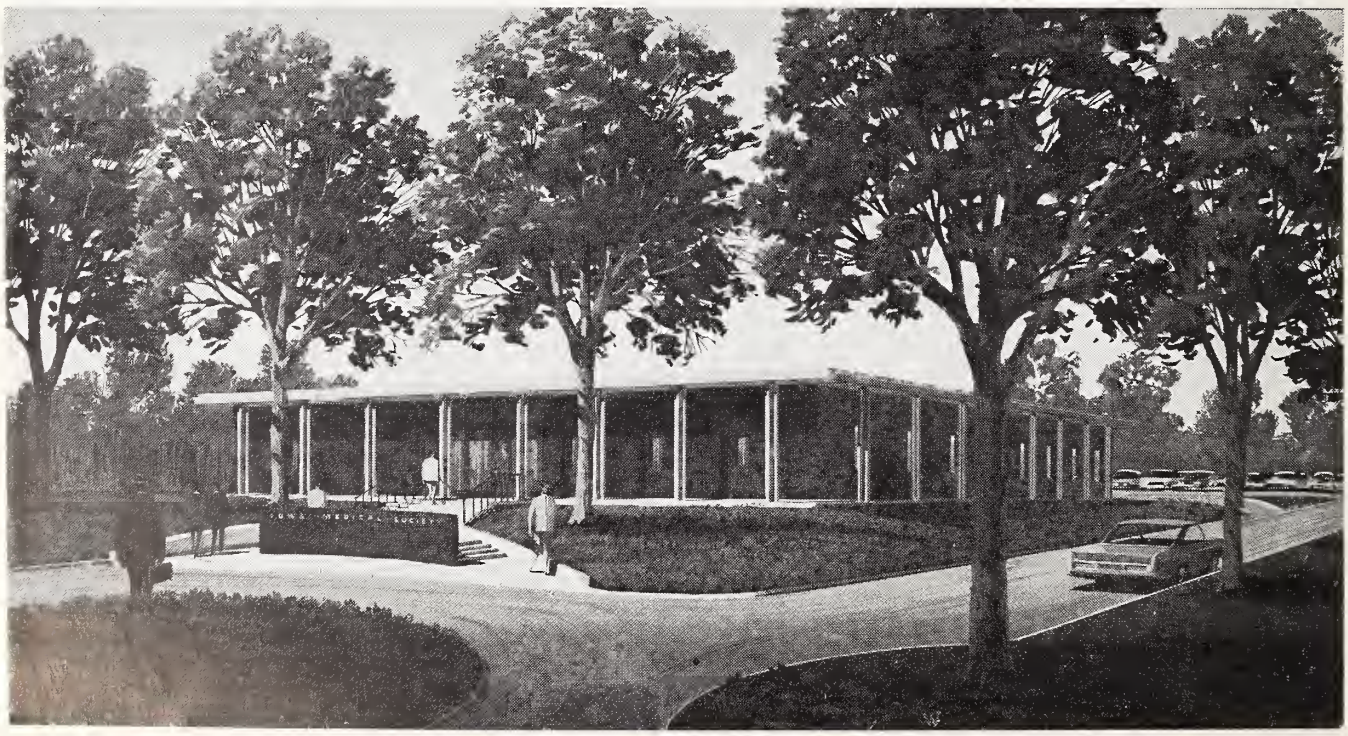
Frank Ober

President

Dr. Lee Forrest Hill, of Des Moines, is shown receiving the 1965 IMS Merit Award in recognition of his outstanding contributions to organized medicine. The award was presented by Dr. S. P. Leinbach, of Belmond, president-elect of the IMS, during the Annual Banquet.

Dr. Otis Wolfe, 1964-1965 IMS president, is shown presenting the Society's Washington Freeman Peck Award to Miss Betty Lou McVay and Mr. Robert Mulhall during the IMS Annual Banquet, April 13. Miss McVay is moderator of the "Doctor's House Call" program produced over WOI radio, in Ames, in cooperation with the Iowa Medical Society, and Mr. Mulhall is general manager of WOI AM-FM TV, in Ames. The Peck award was presented to WOI in recognition of the station's continuing interest and cooperation in advancing public understanding of the science of medicine. The award was named in honor of Dr. Peck, who was directly responsible for the establishment of a medical school at Iowa City in 1870, and who served as the first dean of faculty.

ELEVEN STALWARTS—Braving near-zero temperatures and blustery winds, the delegation above participated in a brief ground-breaking ceremony for the new Iowa Medical Society headquarters building to be located at Tenth street and Grand avenue in West Des Moines. The ground-breaking event was held in conjunction with the March 18 meeting of the IMS Executive Council. Participants from left to right are J. J. Redmond, M.D., Cedar Rapids; Gerald Griffith, partner in the Des Moines firm of Griffith-Kendall, Inc., architects for the building; C. W. Seibert, M.D., Waterloo, chairman of the Building Committee; Donald L. Taylor, executive director of the IMS; O. D. Wolfe, M.D., Marshalltown; S. P. Leinbach, M.D., Belmond; J. H. Sunderbruch, M.D., Davenport; F. G. Ober, M.D., Burlington; Eldon Huston, assistant to the executive director of the IMS; L. D. Caraway, M.D., Monticello; and V. L. Schlaser, M.D., Des Moines.



The Architects' concept of the new IMS Headquarters.

18th AMA National Rural Health Conference

The AMA's 18th National Rural Health Conference was held on March 26 and 27, at the Americana Hotel, in Miami Beach, Florida, and the registration approximated 300. The most informative address on Friday morning was given by Joseph Volker, D.D.S., vice-president for health affairs at the University of Alabama, Birmingham, on "Preventive Dental Care." He asserted that health care is the third largest "industry" in the United States, in terms of numbers of people employed, the largest being agriculture, and the second largest being construction. He also said that in the city of Birmingham, with a population of about 225,000, the new health center—a governmental operation, of course—is the second largest employer.

Dr. Volker said that the 3,200 dentists who graduate from American dental schools each year are no more than about half enough, and that the only practical solution for the inadequacies of dental care in this country is prevention of tooth decay and consequent malformation. At present, the average child 10 or 12 years of age in this country has eight missing, decayed or filled permanent teeth, and in the depressed Appalachia area, the average child needs eight tooth-restorations and 1½ extractions.

As proof that international commerce and the foods distributed in it are responsible for tooth decay, Dr. Volker stated that in Thailand the children in coastal cities have three times as much dental decay as do those in isolated inland communities. Similarly, in Iceland there was virtually no tooth decay prior to the importation of refined sugar and white flour. But Iceland now has more tooth decay than any other country that has been surveyed.

SOFT DRINKS AND CHEWING GUM ARE BACK IN FAVOR

He laid great emphasis on his belief that the form in which sugar goes into the mouth is significant. Sugar-containing liquids such as soft drinks, he said, do very little harm, since the sugar passes through the mouth so rapidly that it provides no food for caries-causing bacteria. Chewing gum, he declared, does equally little harm, since the act of chewing activates the salivary glands; saliva dissolves and dilutes the sugar; and the saliva-containing sugar is promptly swallowed. Rather, he incriminated caramel, chocolate and fine-textured white bread and cake, which tend to coat the teeth and to remain in the mouth for an hour or more. Toothbrushing—regardless of how frequent or how thorough—he regards as an inadequate remedy.

Dr. Volker discussed two remedies. First is the fortification of white bread with calcium phosphate—a diversionary technic that gets bacteria to attack the calcium in the bread rather than the calcium in tooth enamel. In clinical studies, he said, it had reduced tooth decay 50 per cent the first year and 40 per cent the second.

The second, of course, is fluoridation. Currently, public water supplies serving 60 per cent of all Americans are fluoridated, but Dr. Volker said that in half-dozen states, most of them in the Great Plains and Rocky Mountain areas, no more than 10 per cent of communal water supplies are fluoridated. He named Nebraska as one of those six. Fluoridation of water cuts the incidence of caries 50 per cent, on the average, but fluoride dentifrices at best reduce them no more than 30 or 35 per cent. Some dentifrices now undergoing trials, he reported, promise to reduce caries 50 per cent if applied no more frequently than once a year.

Vitamin products containing fluorides can help protect the deciduous teeth of infants, and Dr. Volker recommended them, pointing out that the water consumption of infants hasn't been precisely determined but is probably very small. Dr. R. W. Boulden, of Lenox, Iowa, asked him what he thought of giving such medications to pregnant women. Dr. Volker's answer was that the theory is attractive, but no one knows how much fluoride would pass the placental barrier.

Another questioner asked Dr. Volker for an evaluation of a brand of toothpaste heavily advertised on television, which is said to get teeth especially white and to have a "tingling" taste. He said that the formula for the product is one that American manufacturers discarded several years ago because it contained an excessive amount of abrasives. The British makers, he said, have introduced a small amount of chloroform into it, to give it its vaunted exhilarating, "clean" taste.

The principal individual speaker at the Friday afternoon session was Mr. Forrest E. Myers, assistant director of the Florida Agricultural Extension Service, Gainesville, and his topic was "Safe Use of Agricultural Chemicals." Florida's Rural Health Committee consists of representatives from a number of the professions, rather than being made up just of doctors of medicine, and each county has a similarly constituted committee. Actually, these are even broader than the health professions, for they include a "residue inspector," a vocational-agriculture teacher and a chemical-industry representative. They engage in programs of research, education and enforcement. Incidentally, the 13 southeastern states cooperate on research in this field.

Like the problems of migrant workers, chemical pesticides and preservatives are more important to Florida and its neighboring states than they are to Iowa. Mr. Myers dramatized the size of Florida's export of fresh fruits and vegetables for his audience by saying that last year's shipments would

have filled a train extending the length of the U. S. coastline from Maine to Texas.

Florida operates an agricultural-chemical information center at the Extension Division of the University of Florida, it puts out a paper called CHEMICALLY SPEAKING, it conducts schools for community leaders, and it issues training guides for use by vocational-agriculture teachers. Mr. Myers said that pesticides aren't the major agents in accidental poisonings in Florida, since 62 per cent of such deaths last year were produced by misuse of medicines and 20 per cent by cleaners, etc., but that 11 per cent resulted from the agricultural chemicals.

VENDOR PROGRAMS IN KENTUCKY, MINNESOTA AND WISCONSIN

Dr. S. P. Leinbach, of Belmond, Iowa, served as moderator of a panel presentation on MAA, and outlined the present status of the Iowa program. Dr. G. L. Simpson, of Greenville, Kentucky, talked not only about MAA in his state, but also about physician recruitment there. He said that in 1950 only 12 of the 150 counties in Kentucky were doing acceptable work in providing health care for the poor. In 1960 an interprofessional group got legislation for an MAA program that provides care only for patients with acute illnesses and injuries. There is a pilot rehabilitation program under way at a single hospital, providing care and retraining for patients with fractured hips and for cardiac respiratory cripples. In a state with a population of 3,000,000, of whom 11 per cent are over 65 years of age, there are now about 20,000 MAA recipients.

Dr. Simpson also told of a plan begun by the state medical society, with financial assistance from the state government, to provide medical-school scholarships on condition that each recipient promise to spend a year in rural general practice for each year that he received support. Of 258 students helped, 240 have earned M.D. degrees, and 122 are now practicing in rural Kentucky. He was asked whether any of the young men have attempted to evade rural practice, and he replied that state-government participation has made the contracts easy to enforce. Actually, the board of medical licensure threatens to deny young men their right to continue practice if they fail to fulfill their obligations.

Dr. John L. Falls, of Red Wing, described Minnesota's experience with MAA. He said that Minnesota's unlimited OAA program made it especially doubtful that it had any need for MAA, but after a year of study, a plan with unlimited benefits but with a $200 deductible was started on July 1, 1964. Costs have trailed predictions and budgeting, and changes are now being proposed so as to grant eligibility to anyone whose health-care expenditures bring his disposable income below the previously-established income limits. Pre-certification is also being considered. A joint commission from the medical society and the state welfare department advises the department regarding all welfare programs, and Dr. Falls implied that all of them are being operated to the medical society's satisfaction.

Dr. John Allen, medical director for the Wisconsin State Welfare Department, outlined his state's experience with MAA. He said that the program began July 1, 1964, with an appropriation (including federal matching funds) of $6,000,000, and with Continental Casualty Co., of Chicago, as fiscal agent. Physicians are paid usual and customary fees (determined county-by-county), care is paid for only while patients are in hospitals or nursing homes, and a patient's stay in a hospital or nursing home may not exceed 45 days per year. Income limits are $1,800 and $2,100, and there is a deductible amounting to five per cent of the individual or couple's annual income.

There is pre-certification, and from a population of 4,500,000 just 27,000 have thus far been certified for benefits. Presumably as of the day on which he spoke, $2,800,000 had been paid out on behalf of 7,287 persons, and services rendered to an additional 13,000 were in the process of being paid for.

Currently, only "legend" drugs are paid for, and it has been proposed that insulin be added to that list, though it isn't a "legend" drug. It is also proposed that the state pay for radiation treatments in physician-owned facilities, and that the "recovery clause" in the enabling legislation be eliminated.

TIPS FOR P-R PERSONNEL

Late Friday afternoon the conferees were given a choice of three discussion groups—"Nutrition," "Communication," and "Health of Migrant Workers." The speakers on "Communication" were Mr. George Menard, a farm-news man for WBBM-TV, Chicago, and Mr. E. A. Moffett, who has had a similar background but now is in the employ of the Extension Division at the University of Florida. The discussion centered on ways in which public-service groups can ingratiate themselves with television-station personnel. People in the audience were admonished to consider the broadcasters' point of view—to take a look at the TV station's rate card and see how many dollars of revenue they are asking the station to forego. It may be true that the station is obligated to devote a portion of its time to public service, but the station isn't compelled to give time to everyone who asks, or as much time as each asker wants.

Agency and association people were also told that they should have their materials well organized, but should solicit the advice of the program manager as regards their presentation. Too many people, it seems, either have made too little preparation, or have such fixed notions about format that they attempt to tell the television people how to run their business.

Mr. Moffett had conducted a questionnaire sur-

vey, on the basis of which he declared that 80 per cent of station managers say that spot announcements are more effective than longer programs in achieving the objectives of public-service groups.

The audience was asked to consider the visual potentials of television in preparing presentations. If the doctor who is to speak about fractures has a human skeleton or even a large-scale anatomic atlas in his office, he should be urged to bring it with him to the studio so that he can illustrate his talk. And even if just one individual is to do all of the talking, an additional person in the studio—to whom the camera can be turned occasionally—will add visual interest and variety to the presentation. Mention was also made of the fact that charts, posters, etc., ideally, should have dimensions proportionate to those of the home television screens onto which they are to be projected.

At the banquet, on Friday night, the principal speaker was Dr. Edward Annis, for whom Miami is, of course, home. He spoke on the importance of voluntarism in the support of health services.

At the Saturday morning session, a play entitled "To Temper the Wind" was presented by a group of people, some of whom are on the staff of the Dade County (Miami) Medical Society. The play is a very well-written piece portraying the work of homemaker services, and it was very competently performed. It is amusing, perhaps, that the Dade County Society doesn't yet have a homemaker service and hasn't yet found money with which to start one.

PHYSICIANS AND VOLUNTARY HEALTH AGENCIES

In a symposium on Developing Community Health Resources, Mr. Peter Meek, director of the National Health Council, New York City, made the principal contribution. He said that each voluntary health agency must be made to serve a useful, needed function, or to disband. The tools for this purpose are government control, and (preferably) the formation of non-partisan, objective, community information bureaus. He suggested that Better Business Bureaus might be persuaded to undertake this additional function, in the cities, and that the Grange (for which, in Iowa, no doubt, one should substitute the Farm Bureau Federation) should do this work on behalf of rural and small-town people. Such an agency, he said, must ride herd on the voluntary health organizations to make sure that none is just a one- or two-man operation, and that each of them keeps its books open. Furthermore, each such agency should have doctors of medicine at or near the top. Mr. Meek welcomed AMA participation in all phases of this work.

Dr. E. G. Peek, Jr., vice-president of the Florida Medical Association, pointed out that medical care and health are two different things—one of them being the responsibility of doctors and the other the responsibility of laymen. Rural areas must have physicians, and though organized medicine can help, it is the obligation of citizens generally to seek doctors and to provide them good facilities in which to work. Then, when local doctors and facilities have been secured, it is essential that the populace be trained to seek the help they need, and to seek it locally.

Postgraduate Courses at the Vienna Academy of Medicine

The American Medical Society of Vienna, in connection with the Vienna Academy of Medicine, has had a long and outstanding history. It was founded in 1879, with the primary purpose of facilitating contact with the clinics of the faculty and its institutes for visiting English-speaking doctors, and arranging courses for them. The American Medical Society of Vienna was reorganized after World War II, and since 1953 its facilities have been used by 3,000 doctors and postgraduate students. Today, courses and seminars of the Society offer a unique possibility for practical medicine. There are no lecture courses as such, but practical sessions and actual patient examination and treatment, surgical operations, round-table discussions and grand rounds are parts of these seminars.

The medical school of the University of Vienna has nominal control over 52 major hospitals in Vienna, with approximately 40,000 beds. Over 400 full professors, associate professors and assistants are in direct charge of these beds, and therefore offer a postgraduate student a coordinated surgical pool for an extensive variety of medical training. The seminars are arranged individually for any single visiting doctor or any group, for a few days or a month, as requested. Upon completion of the work, each participant is issued a Seminar Congress letter. Special certificates are issued for studies of three months' duration. Extended courses of 10 months lead to a University diploma. The costs range from $1 to $6 per hour for seminars, and up to $70 per month for courses leading to the University diploma. Life membership in the Society is $30, and associate membership is $10.

The club headquarters of the Society are situated in the University section of Vienna and in close proximity to the University Clinics. Every possible amenity is provided to the visiting doctor. The club rooms and extensive library have become a study center for English-speaking doctors in Europe. Further information may be obtained by writing to the secretary of the American Medical Society of Vienna, Universitaetsstrasse 11, Vienna 1, Austria, or to Dr. Wm. K. Rock, 1125 West Fourth Street, Waterloo, Iowa 50702.

The visiting physician will find Vienna a revived cultural capital of central Europe, with an unusual amount of art and social life in a free country only a few miles away from the Iron Curtain. Its

dignified architecture has been restored, and the opera, the music halls, the theatres and the galleries are centers of attraction. Water sports and golf, in summer, and skiing and other Alpine sports, in winter, are within easy reach of the city. Salzburg and its Mozart Festival are nearby. Hotel accommodations are available in all price classes.

Furthermore, 1965 marks the sixth centennial of the founding of the University. Festivities are planned by the Austrian government and the regents of the University, culminating in a number of events this very month.

Iowa Heart Association Scientific Sessions

Holiday Inn South, Des Moines, Saturday, May 15

9:00 a.m. "Recognition of Hypertension Caused by Renal Artery Stenosis"—W. M. Kirkendall, M.D., director of the Cardiovascular Research Laboratories, U. of I. College of Medicine

10:00 a.m. "New Antihypertensive Drugs"—William R. Wilson, M.D., associate professor of internal medicine and pharmacology, U. of I.

11:00 a.m. "Treatment of Arrhythmias"—Ernest O. Theilen, M.D., professor of internal medicine, U. of I.

11:45 a.m. QUESTIONS

12:15 p.m. LUNCHEON

2:00 p.m. "Treatment of Rheumatic Fever"—Peter Vlad, M.D., associate professor of pediatrics, U. of I.

3:00 p.m. "Evolution of the Rheumatic Diseases in the Mitral Valve"—Jesse Edwards, M.D., chief pathologist at the Charles T. Miller Hospital, St. Paul, Minnesota

4:00 p.m. QUESTIONS

Physicians are also cordially invited to attend the non-professional sessions of the Heart Association's annual meeting, which are being held at the same place, on May 15 and 16. The featured speaker will be Rome Betts, executive director of the American Heart Association. In addition, there will be interesting meetings and panel discussions. All Iowa physicians will be sent copies of the complete program.

Reservations for the sessions can be made by writing or calling the Iowa Heart Association, 1400 Woodland Avenue, Des Moines 50309. The phone number is (Area code 515) 288-3371.

Rocky Mountain Cancer Conference

The 19th Annual Rocky Mountain Cancer Conference will be held on July 16-17, at the Brown Palace Hotel, Denver. Morning symposia for the two-day session will deal with "Practical Chemotherapy in Cancer" and "Malignant Lesions in the Colon." The afternoon sessions will be devoted to scientific papers by guest speakers and an "Information, Please" period, respectively. Speakers will include Lauren V. Ackerman, M.D., a pathologist from the Washington University School of Medicine, St. Louis; Joseph H. Burchenal, M.D., an internist from the Cornell University Medical College and the Sloan-Kettering Institute, New York City; Walter W. Carroll, M.D., a Chicago surgeon; Walter T. Murphey, M.D., a radiologist at Buffalo General Hospital; and James Z. Appel, M.D., and Murray M. Copeland, M.D., president-elect and president, respectively, of the American Cancer Society.

Further information can be obtained from the Rocky Mountain Cancer Conference, 1809 East Eighteenth Avenue, Denver 80218.

Fourth Annual Orthopaedic and Rehabilitation Seminar

YOUNKER MEMORIAL REHABILITATION CENTER
DES MOINES

Saturday, May 15, in the Auditorium of the Iowa Methodist Hospital School of Nursing

9:00 a.m. "Lateral Spinal Fusion in the Treatment of Low Back Disorders"—Keith McElroy, M.D., assistant clinical professor of orthopaedic surgery, Columbia University

10:00 a.m. "Tendon Transfers in the Hand"—Joseph Boyes, M.D., clinical professor of surgery, University of Southern California

11:00 a.m. "Clinical Aspects of Electromyography"—Y. T. Oester, M.D., Ph.D., professor of pharmacology, Stritch School of Medicine, Loyola University, Chicago

12:00 noon LUNCH

1:30 p.m. "Problems of Back-to-Work Programs for the Handicapped"—Stanley Peterson, M.D., internist and regional consultant to the Division of Vocational Rehabilitation, Springfield, Missouri; and Earl L. Loyd, M.D., chief medical consultant, Missouri Vocational Rehabilitation Administration, Jefferson City

2:30 p.m. "Fractures About the Ankle"—Carlo Scuderi, M.D., professor of orthopaedic surgery, University of Illinois

3:30 p.m. "Treatment of Non-Union and Aseptic Necrosis of the Femoral Neck and Head by Bone Grafting"—Michael Bonfiglio, M.D., professor of orthopaedic surgery, University of Iowa

4:30 p.m. TOUR OF YOUNKER MEMORIAL REHABILITATION CENTER (Walter L. Modaff, M.D., associate physiatrist, will accompany physicians who wish to see the facilities.)

Discussion will follow each presentation.

Coming Meetings

IN STATE

May 4-5	**Diseases of the Colon and Rectum,** U. of I. College of Medicine, Iowa City.
May 6-7	**Conference on Arthropod-Borne Viral Encephalitis,** Sheraton-Warrior Motor Inn, Sioux City, Iowa.
May 14-15	**Fifth Institute on Preventive Psychiatry,** U. of I. College of Medicine, Iowa City.
May 15	**Fourth Annual Orthopaedic and Rehabilitation Seminar, Younker Memorial Rehabilitation Center,** Methodist Hospital School of Nursing Auditorium, Des Moines.
May 21-23	**Tri-State Meeting of the Illinois, Iowa and Wisconsin Associations of Blood Banks,** Clayton House Motel, Davenport.
June 7-11	**Basic Principles of Internal Medicine, American College of Physicians,** U. of I. College of Medicine, Iowa City.
June 10	**Fourth Annual General Practice Seminar for Northeastern Iowa Physicians,** Mental Health Institute, Independence.
June 10-12	**Spring Postgraduate Conference, Iowa Chapter, American Academy of General Practice,** New Inn, Lake Okoboji
June 12	**Symposium on Recent Advances in Diagnosis and Treatment of Cancer,** Iowa Lutheran Hospital, Des Moines.

CONTINENTAL U. S.

May 3-4	**Conference on Arthropod-Borne Viral Encephalitis,** Kansas State Department of of Health and Missouri Division of Health, Kansas City, Mo.
May 3-4	**Otorhinolaryngology,** University of Kansas Medical Center, Battenfeld Auditorium, Kansas City, Kan.
May 3-4	**Cardiac Auscultation,** University of Kansas Medical Center. Kansas City, Kan.
May 3-4	**Surgery and Trauma,** University of Nebraska College of Medicine, Omaha.
May 3-6	**15th Annual Meeting, Student American Medical Association,** Palmer House, Chicago.
May 3-7	**National League for Nursing Convention,** San Francisco.
May 4-6	**State Medical Society of Wisconsin Annual Meeting,** Milwaukee.
May 4-27	**Short course for directors of hospital volunteer services,** American Hospital Association, Columbia University, New York City.
May 9-14	**1965 Annual Meeting, Ohio State Medical Association,** Veterans Memorial Building, Columbus, Ohio.
May 10-14	**Rehabilitation, American College of Physicians,** New York University Medical Center, New York City.
May 11-13	**Long Island Jewish Hospital's Symposium on Vectrocardiography,** Sheraton-Tenney Inn, La Guardia Airport, Queens, N. Y.
May 14-16	**Twelfth Western Cardiac Conference,** Broadmoor Hotel, Colorado Springs.
May 15-19	**Annual Meeting, Medical Society of New Jersey,** Haddon Hall, Atlantic City.
May 17-20	**Cardiovascular Pathology, University of Colorado School of Medicine,** Humphreys Postgraduate Center, University of Colorado, Denver.
May 20-21	**1965 Group Health Institute,** Bellevue-Stratford Hotel, Philadelphia.
May 20-22	**Centennial Symposium,** University Hospitals of Cleveland, Cleveland, Ohio.
May 24-25	**Postgraduate Course in Pediatrics,** University of Cincinnati, College of Medicine, Cincinnati.
May 30-June 3	**Annual Meeting of the Medical Library Association,** Bellevue-Stratford Hotel, Philadelphia.
June 7-18	**Neuromuscular Diseases of Children with Special Emphasis on Management,** Cook County Graduate School of Medicine, Chicago.
June 8-11	**Golden Jubilee, Catholic Hospital Association Convention,** Kiel Auditorium, St. Louis, Mo.
June 9-11	**The Hemodynamic Basis for Auscultation, American College of Physicians,** New York University Medical Center, New York City.
June 14-16	**Religion and Medicine Conference, University of Colorado School of Medicine,** Estes Park, Colorado.
June 14-17	**64th Annual Meeting of the American Proctologic Society,** Hotel Leamington, Minneapolis.
June 14-18	**Hematology for Internists, in the Light of Recent Developments, American College of Physicians,** University of Rochester School of Medicine, Rochester, New York.
June 16	**1965 Scientific Session of the American Cancer Society,** Drake Hotel, Philadelphia.
June 20	**Seventh Annual AMA-ASHA Preconvention Session on School Health,** New York City.
June 20-24	**AMA 114th Annual Convention,** New York City.
June 27-July 2	**American Physical Therapy Association 42nd Annual Conference,** Sheraton-Cleveland Hotel, Cleveland, Ohio.

ABROAD

May 22	**International College of Surgeons,** Khon Kaen, Thailand.
May 24-26	**Current Concepts in Gastroenterology—American College of Physicians,** Royal Victoria Hospital, Montreal, Quebec.
May 24-26	**Fourth International Congress for Hygiene and Preventive Medicine,** Vienna, Austria.
May 24-27	**Fifth International Thyroid Conference,** Rome, Italy.
June 16-19	**International College of Surgeons European Federation Congress,** Helsinki, Finland.
June 30-July 5	**International College of Surgeons New England and East Canadian Region Meeting,** Mont Gabriel, Quebec, Canada.
July 22-24	**International College of Surgeons Guanabara Division Meeting,** Rio de Janeiro, Brazil.
July 28-31	**Second International Congress of Psychosomatic Medicine in Obstetrics and Gynecology,** Vienna, Austria.
Aug. 8-14	**Eighth International Anatomical Congress,** Wiesbaden, Germany.

Iowa Chapter of the American Academy of General Practice

Spring Postgraduate Conference
New Inn, Okoboji, Iowa
June 10-12, 1965

The Sixth Annual Spring Postgraduate Conference will again be held at the New Inn on Lake Okoboji, Iowa's bluest of all lakes. Your entire family will enjoy this vacation spot while you, a physician, will become further educated in the new concepts of medicine. An outstanding program has been planned for the three-day conference, in cooperation with the Iowa Heart Association and with financial assistance from Eli Lilly & Company. The Iowa Chapter has been granted four Lilly Seminars this year, and two of these days at Okoboji will be Lilly Seminars.

As before, the lectures will all be held in the mornings, to leave you your afternoons free for relaxation with your family, and for the vacation sports you enjoy at a lake. Make plans now, and write direct to the New Inn for reservations for the entire three days. The scientific program outlined below has been accredited for 11½ hours by the American Academy of General Practice.

Thursday, June 10

(Heart Day)

"Care of Acute Myocardial Infarction"—Herman Smith, M.D., Des Moines

"Arrhythmias"—Robert L. Grissom, M.D., Omaha

"Medical Intensive Care Units and the Care of the Acute Cardiac"—R. B. Giuliani, M.D., Rochester, Minnesota

"Pulmonary Emergencies"—Jack Moyers, M.D., Iowa City

Friday, June 11

(Lilly Seminar)

"Unwise Medications in Pregnancy"—W. C. Keettel, M.D., Iowa City

"The Premature Infant"—John L. Gedgoud, M.D., Omaha

"Alcoholism"—Beverley T. Mead, M.D., Omaha

"Shoulder Injuries"—Claude M. Lambert, M.D., Chicago

"Neurological Examination as Done by the GP"—Clark Millikan, M.D., Rochester, Minnesota

Saturday, June 12

(Lilly Seminar)

"Diagnosis and Treatment of Multiple Sclerosis"—Dr. Millikan

"Myocervical Strain"—Dr. Lambert

"Acute Anxieties"—Dr. Mead

"Immunization Routine"—Dr. Gedgoud

"Induction of Labor"—Dr. Keettel

Fourth Annual
General Practitioners' Seminar

Thursday, June 10, 1965
Auditorium, Mental Health Institute
Independence, Iowa

12:30-1:30 p.m.—Registration

1:30-3:00 p.m.—"The Use and Abuse of Tranquilizers and Mood Elevators"
Harry Oestreicher, M.D., F.A.P.A., Clinical Director, Mental Health Institute, Independence

3:00-3:15 p.m.—Coffee Break

3:15-4:15 p.m.—"Emotional Problems of Children"
Richard J. Bealka, M.D., Director of Children's Unit, Mental Health Institute, Independence

4:15-4:30 p.m.—Coffee Break

4:30-6:00 p.m.—"Office Management of the Psychiatric Patient"
Charles F. Shagass, M.D., F.A.P.A., Professor of Psychiatry, Department of Psychiatry, University of Iowa

At Hotel Pinicon, Independence

6:15-7:00 p.m.—Cocktail Hour

7:00-8:00 p.m.—Smorgasbord Dinner

PROGRAM POSSIBLE THROUGH SPECIAL GRANT OF SMITH, KLINE AND FRENCH COMPANY

THE DOCTOR'S BUSINESS

Hedging Against Economic Fluctuations

HOWARD D. BAKER
Waterloo

How can you build up your investment portfolio in such a way as to provide maximum protection against increases and decreases in the value of the dollar?

There are two classifications of investments or contracts that will accomplish this goal: fixed or dollar contracts such as bonds, savings accounts and mortgages having specified or fixed redemption values, and flexible or equity contracts such as corporate stocks and real property having flexible redemption values depending on current market values.

The flexible contract serves as an inflation hedge, for as prices increase and the value of the dollar decreases, the market value of this contract will increase. The dollar contract serves as a hedge against price declines and deflation, for as the value of the dollar and prices go down, the purchasing power of the dollar contract increases. By maintaining your investment portfolio at an approximate 50-50 balance, the increased value of one type contract will offset the decreased value of the other type contract, thereby maintaining the purchasing power of the over-all plan. The consensus is that this plan should be followed in setting up and accomplishing a retirement plan. When this basic plan has been completed and additional funds are available for investment, the hedging feature may be abandoned, but the original portfolio should be maintained in balance.

Cash values of life insurance and the discounted value of accounts receivable should both be considered as one determines and maintains the balance between fixed and flexible contracts. This plan should not be considered a perfect hedge since the market situation of one investment may vary more than another, but the plan is basically sound and is generally accepted as the most suitable economic hedge that can be devised.

A simple example of this plan in operation would be a portfolio containing $1,000 in savings and loan deposits and $1,000 in good-grade common stocks. Assuming a 50 per cent inflation of the dollar, the purchasing power of the savings would be reduced to $500 and the purchasing power of the common stocks would increase to $1,500, resulting in the same purchasing power as before. If the dollar were deflated 50 per cent, the common stocks would be reduced to $500 and the savings increased to $1,500 of purchasing power. Assuming that market fluctuations were exactly equal on all goods, there would be no loss of purchasing power in either inflation or deflation.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Attend the 114th
Annual AMA Convention
The Coliseum, Columbus Circle
New York City
June 20-24

- Six General Scientific Meetings
- Twenty-Three Specialty Programs
- Lectures, Panel Discussions, Motion Pictures, Color Television
- Over 700 Scientific and Industrial Exhibits

For the complete program, see the May 10 issue of JAMA.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., COMMISSIONER

Iowa Influenza Summary, 1964-1965

The MORBIDITY AND MORTALITY WEEKLY REPORT from the Communicable Disease Center of the U. S. Public Health Service for the week ending March 6, 1965, carries the accompanying influenza summary for the United States for the winter of 1964-65:

BASED ON STATE REPORTS

	State or Territory	Geographic Distribution Widespread	Scattered, Sporadic	First Recognized	Lab. Confirm. Isolation	Sero.
		CONFIRMED OUTBREAKS				
1964	Puerto Rico	X		August	A_2	A
	Hawaii	X		September	B	B
	Oregon		X	October	—	A
	Maine		X	November	—	B
1965	Connecticut	X		December	A_2	A
	New Jersey	X		January	A_2	A
	Massachusetts	X		January	—	A
	Pennsylvania		X	January	A_2	A
	Missouri		X	January	A_2	A
	Maine		X	January	—	A
	New York		X	January	A_2	A
	Vermont		X	January	—	A
	New Hampshire		X	January	—	A
	Iowa		X	January	—	A
	Michigan		X	January	A_2	A
	Kansas		X	February	A_2	A
	Alabama		X	February	—	A
	Texas		X	February	—	A
	Florida		X	February	—	A
	Ohio		X	February	—	A
	Wisconsin		X	February	—	A
	Colorado		X	February	B	B,A
	Washington, D. C.		X	March	A_2	A
	Georgia		X	March	A_2	A
	Illinois		X	March	A_2	A
	Louisiana	X		March	—	A
		INFLUENZA-LIKE ILLNESS				
1965	Mississippi		X	January	—	—
	Arkansas	X		January	—	—
	Tennessee		X	February	—	—
	North Carolina		X	February	—	—
	Oklahoma	X		February	—	—
	South Carolina		X	February	—	—
	Virginia		X	March	—	—

Iowa is included in the accompanying summary table as one of the states that had confirmed outbreaks of the illness. During November and December many areas of the state were reporting influenza, but on investigation, these outbreaks proved definitely *not* to be influenza but to be a gastrointestinal illness of about one-to-three-days duration. Physicians as well as patients called it "flu" or "intestinal flu."

Influenza did appear in Iowa beginning early in January. Our attention was first drawn to cases in the southern part of the state. At about the same time that Dr. Albert McKee, director of the World Health Organization Regional Virus Laboratories at Iowa City, identified the disease from patients in Jefferson County, it was also identified by Missouri public health workers in Mercer County. Mercer County is in the northwestern part of Missouri located just south of Decatur and Wayne Counties in Iowa. It lies about 100 miles south and west from Jefferson County, Iowa. Physicians in Decatur and Wayne Counties agreed that the illness was present in their counties in January. During the latter part of January and the first part of February, influenza appeared in most areas of Iowa.

An investigation of the outbreak in Jefferson County showed that the first recognized case in the county was in a student at Parsons College at Fairfield. His illness began January 6, two days after classes resumed following Christmas vacation. Of the first ten students who became ill, eight were from the Atlantic Seaboard. The peak of the outbreak at the College was about January 20. About 500 of 3,300 students became ill. Of 60 faculty members, eight or 10 developed influenza.

The illness extended about a week later to the city of Fairfield, which has a population of 8,000, and it peaked from January 29 to February 1. In addition to the 500 cases among college students, there were about 800 among residents of Fairfield. The "downtown" groups were worse hit than was the general population. Those affected probably were the people of the town who had most contact with the college students.

Physicians noted that persons who had been vaccinated in the fall of 1964 generally did not develop the disease. One industry was cited. Over 90 per cent of its employees had had influenza immunizations. Absenteeism at that plant did not increase during the period of the influenza outbreak. Doctors described the illness as having an incubation period of about three days and having a duration of about three to nine days. The symptoms were temperatures of 101° to 104°F, chills, severe headache, muscular aching, unproductive cough, sore throat and dizziness. Some physicians particularly noted that their patients complained of chest pains with the above symptoms. The histories of the two patients from whom Dr. McKee obtained serologically positive specimens are as follows:

Mrs. W.M., age 32, rural housewife, became ill January 18 with symptoms of chest pain, cough, complaints of "aching all over," headache, fever and chills. Duration of her illness was about a week. Her two children, 6 months and 3 years of age, developed influenza following their mother's illness and were quite ill for over a week with temperatures up to 104°F.

The other case, S.E.B., a 12-year-old girl in the 7th grade, became ill on January 14. Two other pupils in her grade at school developed a similar illness on the same day. She had symptoms of chest pain, cough, temperature of 102°F, chills and headache. She complained of "aching all over." The duration of her illness was about a week.

A survey was made of admissions to the hospital at Fairfield for the month of January. It was found that six patients were admitted because of upper respiratory infection, 12 for influenza, five for bronchitis, 10 for lobar pneumonia, 19 because of pneumonitis and two for tonsilitis. Most of these admissions came during the second half of the month, after the outbreak of influenza was well on its way.

A final laboratory report received March 31, 1965 from the State Hygienic Laboratory gives serologic confirmation of influenza in Polk County.

RALPH H. HEEREN, M.D., *Director*
Division of Preventable Diseases

AVAILABLE FROM THE STATE DEPARTMENT OF HEALTH

For venereal disease control
- Procaine penicillin (aqueous or oil suspension)
- Benzathine penicillin G (Bicillin)
- Achromycin (250 mg. capsules)

Immunizing agents
- Triple toxoid
- Diphtheria-tetanus toxoid (Combined, absorbed or precipitated—Adult type)
- Salk and Sabin poliomyelitis vaccines
- Typhoid vaccine triple (Typhoid, para A and para B)
- Smallpox vaccine

Rabies control materials
- Duck embryo anti-rabies vaccine
- Anti-rabies serum

Histoplasmin

Snake anti-venom (kept at poison center and sub-centers)

Gamma globulin (for protection of people exposed to measles, German measles, or infectious hepatitis, if the risk is sufficiently great)

For detailed information, see the April, 1965, JOURNAL, *pages 225-227, or telephone the Department.*

The Role of Rodents In the Epidemiology of Rabies*

A substantial number of the humans bitten by animals receive their wounds from some member of the Order Rodentia. In most of these cases the perplexing question is whether or not the patient was exposed to rabies as a result of the bite. The following data are given to assist in the evaluation of this question.

The Order Rodentia is very large, both in numbers of species and numbers of individuals. It includes many species of rats and mice, both those found as pests in human habitats and the many and varied wild varieties: gophers, muskrats, moles, lemmings, porcupines, nutria and beaver. Also included are the many members of the squirrel family: woodchucks (or groundhogs), marmots, prairie dogs, tree squirrels, ground squirrels and chipmunks. Guinea pigs and hamsters are domesticated rodents.

Because they frequently bite, occasionally even when unprovoked, large numbers of rodents are examined for rabies by health laboratories each year. A review of the rabies examinations done at the laboratories of three state health departments during 1962 show that 21.5 per cent of the animals examined were from the Order Rodentia. The rodents most often found biting man, and examined for rabies, are squirrels.

In spite of the relatively large number of rodents examined for rabies very few are found infected. For the 10-year period from 1954 through 1963, only 199 of the 47,211 laboratory confirmed cases of animal rabies reported in the United States were in rodents. These were 0.42 per cent of the total number of rabid animals. The 82 squirrels reported infected during this period represented only 0.17 per cent of the total. Thirteen different rodent species were reported rabies-positive during that 10-year period. In numbers of cases reported, squirrels were followed by woodchucks, rats, muskrats, mice, gophers, chipmunks, hamsters, beaver, porcupines, prairie dogs, flying squirrels and guinea pigs.

It should be noted that the number of reported cases of rabies in rodents has decreased in recent years. This is at least partly due to the fact that the traditional examination of brain smears for Negri bodies has been widely supplemented, or replaced, by the fluorescent rabies antibody test. This more specific test has helped to eliminate the necessity of differentiating between Negri, and "Negri-like," inclusion bodies. Since inclusion bodies other than Negri are frequently found in animal brain smears, it seems likely that many false-positive diagnoses were made during the time when that test was almost exclusively used as a diagnostic criterion.

Occasional cases of rabies do occur in rodents of different species, but certainly less frequently than even the scant number of reported cases indicates. Rabies infection in a rodent appears to be rare enough to merit conducting virus isolation and serum neutralizing identification tests on animal specimens suspected of being rabies-positive on the basis of other tests.

* Source: U. S. Public Health Service Communicable Disease Center, MORBIDITY AND MORTALITY WEEKLY REPORT, November 13, 1964.

Morbidity Report for Month of March 1965

Diseases	1965 Mar.	1965 Feb.	1964 Mar.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	562	479	496	Jefferson, Johnson, Polk
Typhoid fever	0	0	3	
Smallpox	0	0	0	
Measles	1,277	1,077	418	Boone, Dubuque, Polk
Whooping cough	1	7	0	Polk
Brucellosis	5	4	6	Woodbury
Chickenpox	743	977	390	Crawford, Des Moines, Dubuque, Polk, Scott
Meningococcic meningitis	1	0	1	Adair
Mumps	637	696	1,371	Black Hawk, Des Moines, Floyd, Pottawattamie
Poliomyelitis	0	0	0	
Infectious hepatitis	64	64	24	Dubuque, Linn, Palo Alto, Scott, Tama
Rabies in animals	17	19	46	Cass, Davis
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	24	20	15	For the state
Syphilis	49	50	67	For the state
Gonorrhea	205	204	82	For the state
Histoplasmosis	2	0	1	Iowa, Marion
Food intoxication	0	0	0	
Meningitis (type unspecified)	4	6	3	Butler, Clayton, Keokuk, Scott
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	0	
Salmonellosis	7	19	3	Polk
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	1	1	
H. influenzal meningitis	0	3	0	
Amebiasis	2	0	0	Boone, Marshall
Shigellosis	200	7	4	Winneshiek (delayed reports)
Influenza	1,202	3,792	392	

The House of Delegates of the Iowa Medical Society Is

The True Voice of Iowa Physicians

At its meetings in Des Moines on April 11 and 14, the House of Delegates of the Iowa Medical Society received and considered no fewer than 65 reports from permanent IMS committees, received 20 resolutions on various subjects from county medical societies, and heard testimony about and acted upon those of the issues that required action.

Physicians throughout Iowa—and the general public, too—should take considerable satisfaction from the fact that the procedures followed by the IMS House of Delegates closely resemble those of the General Assembly of Iowa and the U. S. Congress. Unlike those of the governing bodies of many churches, fraternal orders and occupational groups, the rules and methods followed by organized medicine assure full participation by individual members and by their local societies, and facilitate careful deliberation on every topic that is of concern to them.

Ninety-five county or two-county medical societies compose the IMS, and each of them is entitled to send one representative to the House of Delegates for every 25 of its members (or major fraction thereof), and no matter how small, each society is entitled to one representative for each of its counties. This spring, 52 of the 65 committee reports and seven of the 20 resolutions from county medical societies were printed in booklet form and provided to all delegates and alternates a month prior to the meetings, so that they might study them. The reports and resolutions submitted too late for publication in the handbook were provided to the delegates in typewritten form, and in most instances were also read aloud to them, at the initial meeting of the House of Delegates, on Sunday, April 11.

Later, on that same Sunday, the several reference committees of the House of Delegates held meetings to hear discussion of the various reports and proposals, and non-delegates were encouraged to participate. Finally, on Wednesday, April 14, the reports of the reference committees were put into the hands of all delegates in typewritten form, each of them was read from the podium, and amendments were invited, before votes on them were taken. Out of a possible total of 148, there were 112 delegates or voting alternates present on Sunday, April 11, and 109 on Wednesday, April 14.

THE "REASONABLE, USUAL AND CUSTOMARY" PRINCIPLE

The chief concern of the Iowa Medical Society, for the past year or two, has been the establishing of "reasonable, usual and customary fees," as the basis for physician compensation in programs under which doctors' charges are to be paid by an organization, rather than by individual patients. These include the "categorical" programs of the state and federal governments (MAA, OAA, ADC, AB and AD), Workmen's Compensation, and voluntary health and accident insurance arrangements, The alternatives to "reasonable, usual and customary fees" are (1) uniform fee schedules, or (2) indemnity payments from the organization to the beneficiary or policyholder.

Physicians prefer to be paid their "reasonable, usual and customary fees" as a matter of principle, though in many instances such an arrangement is less financially advantageous to them than either of the others would be. "Reasonable, usual and customary fees," Iowa physicians agree, are entirely fair because they reflect the differing costs of practice in rural and in urban settings. Furthermore, by sanctioning differentials they reward physicians for seeking specialty training, and thus help constantly to raise the quality of patient care.

At its meeting last month, the IMS House of Delegates urged deliberate speed in completing a survey of county ranges of fees for medical and

surgical procedures, and empowered the officers of the Society to use those county ranges in all future negotiations with "third parties."

The House was informed that in eastern Iowa, a major commercial insurance carrier has been pleased with an arrangement under which it is paying "reasonable, usual and customary fees" to doctors, and that other companies are contemplating similar plans. The State Board of Social Welfare accepted that arrangement for the Medical Aid for the Aged, at the start of that program 30 months ago, and it is hoped that in the future, perhaps, it may be possible to change the medical phases of OAA, ADC and the other governmental programs to the usual-reasonable-and-customary basis, and to get other insurance companies to use it.

AREAWIDE HEALTH FACILITIES PLANNING

The IMS House of Delegates was told that there is a real danger of dictation by a national authority regarding the construction, renovation or improvement of hospitals and other health-care facilities throughout America, and that in consequence, people in small communities probably would have to travel long distances for adequate hospital care. The House recommended the appointment of a committee to promote intelligent coordination among community health authorities, pointing toward the formation of one or more area health-facilities planning groups on a voluntary basis. The support and cooperation of the Iowa Hospital Advisory Council, representatives of various health facilities and organizations, and lay groups are to be sought, under the leadership of the IMS.

In keeping with its previous advocacy of local control, the House of Delegates agreed that any new mental health clinics should be built in keeping with plans developed at the local level, and it declared that existing community mental health clinics in Iowa should retain their separate identities and remain apart in physical structure from inpatient facilities.

MISCELLANEOUS ACTIONS

The IMS House of Delegates also—

Requested the IMS Committee on Blood Banking to develop an informational program for county medical societies regarding new developments in blood-banking systems.

Recommended legislation designed to provide the State Department of Health with adequate appropriations to carry out an effective program.

Authorized the IMS Committee on Safe Transportation to develop specific proposals for the establishment of a Medical Advisory Board to the State Department of Public Safety.

Viewed the architects' drawings of the exterior design and floor plans for the new IMS headquarters office, which is under construction at Tenth Street and Grand Avenue, West Des Moines.

ELECTIONS, AWARDS AND COMMENDATIONS

Dr. Frank G. Ober, a Burlington orthopedist, was installed as president of the Iowa Medical Society for 1965-1966, succeeding Dr. Otis D. Wolfe, a Marshalltown ophthalmologist. The following physicians were elected to office:

President-Elect—Dr. S. P. Leinbach, Belmond
Vice-President—Dr. J. M. Rhodes, Pocahontas
Trustee—Dr. Kenneth E. Lister, Ottumwa
Speaker, House of Delegates—Dr. Paul M. Kersten, Fort Dodge
Vice-Speaker, House of Delegates—Dr. J. L. Powers, Estherville
Delegate to the AMA—Dr. Elmer M. Smith, Des Moines
Alternate Delegate to the AMA—Dr. Christian E. Radcliffe, Iowa City
Councilor, District Two—Dr. Jerome F. Paulson, Mason City (reelected)
Councilor, District Seven—Dr. L. Dean Caraway, Monticello
Councilor, District Eight—Dr. James F. Bishop, Davenport
Councilor, District Nine—Dr. Elmer A. Larsen, Centerville
Liaison Delegates—Dr. C. N. Hyatt, Corydon
Dr. R. C. Larimer, Sioux City (reelected)

Dr. Lee Forrest Hill, a Des Moines pediatrician, was honored at the IMS annual banquet. He was presented the IMS Merit Award in recognition of his outstanding contributions to organized medicine and the medical profession. WOI Radio and Television Stations, Ames, were given the Society's Washington Freeman Peck Award for their continuing interest and cooperation in promoting public understanding of the science of medicine.

Dr. Donovan F. Ward, a Dubuque surgeon, was given special recognition by the House of Delegates. He was commended for his outstanding leadership as president of the American Medical Association.

Ten physicians were elected to Life Membership in the Iowa Medical Society. To be eligible, a doctor must have practiced medicine for 50 years, and have been an IMS member for 30 years. They are E. H. McCaffrey, M.D., and H. E. Kleinberg, M.D., of Des Moines; John C. Henkin, M.D., Sioux City; W. F. Brinkman, M.D., Pocahontas; J. W. Thornton, M.D., Lansing; D. F. Huston, M.D., Burlington; Charles E. Block, M.D., and George Braunlich, M.D., Davenport; and G. C. McCreight, M.D., formerly of Des Moines and now of Carmel Valley, California.

A check for $16,295 was presented to the U. of I. College of Medicine at the opening session of the House of Delegates. The money represented a grant from the AMA Education and Research Foundation, to which the majority of IMS members contribute.

It was announced that the 1966 annual meeting will be held in Des Moines on April 24, 25, 26 and 27.

Iowa Association of Medical Assistants

Re: Insurance

In the past several years we have been beset, individually and collectively, by persons primarily interested in insurance—by those wishing to sell some form of coverage, by those interested in assuring the availability of adequate assistance for persons who need it and are not capable of providing for themselves, and by those for whom we, as medical assistants, send claim forms to the various insurance carriers.

In discussing insurance, Portia Frederick and Carol Towner, authors of THE OFFICE ASSISTANT IN MEDICAL OR DENTAL PRACTICE state that voluntary health insurance has made great strides in the past 20 years, and the increased enrollment is an indication that the average American prefers to put his faith in a voluntary program rather than in compulsory government programs of medical and hospital insurance.

Voluntary health insurance is designed for those who can take care of costs of routine illnesses but not of a prolonged illness, major surgery, or a severe injury. Such insurance usually covers only a major portion of relevant bills because the policy has limited either the period of time covered or the total sum to be paid.

There are five common types of voluntary insurance:

1. DISABILITY provides weekly or monthly cash benefits for loss of wages due to accident or illness.
2. FULL-SERVICE COVERAGE (Blue Cross-Blue Shield) covers surgery, hospitalization, inpatient medical care and other services for patients whose individual or family income does not exceed specified limits, provided that the physicians are Blue Shield participants. If the policyholder's income exceeds the stated limit, both Blue Shield and the patient may be billed. If the physician is not a Blue Shield participant, the Blue Shield check will go to the policyholder.
3. HOSPITAL INSURANCE pays all or part of hospital charges, depending upon amount of coverage purchased.
4. SURGICAL INSURANCE pays all or part of surgical expense, according to a schedule of benefits.
5. MEDICAL INSURANCE pays laboratory, x-ray, pathology services and physicians' visits, according to the type of policy purchased, but does not cover surgical fees.

Added to these would be special risk coverage such as major hospital and medical to supplement one of the above, or to cover "dread diseases" such as poliomyelitis, or short term insurance for injuries sustained on automobile or plane trips.

In addition to health insurance there are at least three other types of insurance with which we, as medical assistants, have contact:

1. WORKMEN'S COMPENSATION is mandatory insurance carried by the employer to protect his employees against loss of wages and cost of medical care occasioned by occupational injury or disease.
2. LIABILITY INSURANCE provides benefits for injuries sustained in a car, home or place of business of the policyholder regardless of his legal liability for the accident.
3. LIFE INSURANCE benefits are payable according to terms of policy, i.e., on death to survivors, as monthly income to insured when he reaches the age stipulated in the policy, or as monthly benefits to the policyholder if he becomes permanently and totally disabled.

We have talked before about the importance of complete records in cases involving insurance claims, particularly industrial claims covered by Workmen's Compensation. The increasing number of claims crossing our desks daily make it even more important that we get answers to the questions WHO? WHAT? WHEN? and WHERE? from the patient on his initial visit.

WHO—the patient's name and his age, marital status and home address, and the name and address of his employer.

WHAT—what he was doing at the time of injury, what part of body was injured and what treatment was given.

WHEN—the date and hour of accident, the dates of his total or partial disability, and the date of his most recent tetanus toxoid injection.

WHERE—the exact place of accident, and the place where treatment was given (your office, hospital, site of accident, etc.).

Many times the workman neglects to report an injury to his supervisor or employer, and the necessary claim forms are not sent to your office. You and your employer can save time by using a copy of the standard insurance claim form. A supply of these forms may be ordered from the IOWA MEDICAL SOCIETY, 529 36th Street, Des Moines, Iowa 50312. Ask for copies of the "Attending Physician's Statement" for accident or sickness insurance.

If you have not received claim forms from an insurance carrier within a reasonable period of time —usually in a week or two following date of accident—submit the standard claim form to the employer, with a note stating that forms have not

been received. The employer then forwards them with his report of injury to the proper agency, and prompt payment is usually forthcoming from the insurance company. This is a quick and efficient method of handling insurance claims, and is also acceptable for claims other than Workmen's Compensation. Many persons carrying voluntary insurance do not have the necessary forms for submitting claims, and would prefer that you use a standard claim form to speed up filing and settlement of a claim.

Every medical assistant should be familiar with the various types of accident and health insurance, since she is in daily contact with a variety of insurance forms. Recognition of the essentials for completing preliminary, supplemental and final claim forms makes their completion easier.

Mrs. Frances Marold Mills, of Professional Management, Midwest, Waterloo, Iowa, in an article in the current issue of AAMA BULLETIN also suggests an Insurance Register in which to record the patient's name, the date you receive his insurance papers, the date they are sent out and, we might add, the date the claim is settled.

—HELEN G. HUGHES

Residency Program in Child Psychiatry in Des Moines

As of December 7, 1964, the Des Moines Child Guidance Center was authorized by the Council on Medical Education of the American Board of Psychiatry and Neurology to offer two years of approved training in child psychiatry. To be eligible, a physician must have completed two years of a standard adult-psychiatry residency.

Two residents can be accommodated at a time—one in his first year of child psychiatry, and one in his second. One such resident has already begun his first year's work. For this purpose, the Des Moines Child Guidance Center is affiliated with the residency training program at the Independence Mental Health Institute.

The director of the Des Moines facility, Dr. Milford E. Barnes, Jr., says: "We have a very broad program to offer, which includes at least some exposure and experience in all areas of work with children. Diagnosis and treatment are, of course, the basic concern, but experience can be gained in outpatient, day-hospital and residential treatment of delinquent or retarded children, in work with unmarried mothers, in management of patients with psychosomatic disorders, in adoptions and foster-home placements, and in research. Our clinic is a member of the American Association of Psychiatric Clinics for Children, and we intend to seek the approval of that organization for our training program, in addition to the approval of the Council on Medical Education."

A New Semi-Synthetic Penicillin

The AMA Council on Drugs has issued a preliminary report on a new semi-synthetic penicillin, sodium nafcillin. The drug, described in a March issue of JAMA, was reported to be effective in the treatment of staphylococcic infections resistant to an earlier antibiotic, penicillin G.

Nafcillin has proved effective in treating infections of the respiratory tract, soft tissues and skin, the report said. It also has been effective against osteomyelitis and subacute bacterial endocarditis.

The drug may be given orally, intramuscularly or intravenously. Nafcillin causes more pain and tissue irritation than most other penicillins when given intramuscularly, however, the report said.

Because nafcillin is a new drug, blood cell studies and kidney and liver function tests should be made during prolonged therapy, the report cautioned. Nothing is yet known about the safety of nafcillin in treating pregnant women, but the Council said that the penicillins in general appear to be safe for them.

AMA-ERF Loan Program for Medical Students

One of every six American medical students, interns and residents is being assisted by a loan-guarantee program started three years ago by the AMA. More than 19,000 loans totaling more than $27,600,000 have been guaranteed by the AMA's Education and Research Foundation through a cooperative program with three banks.

Medical students may borrow up to $10,000 over seven years, with up to 10 years to repay. They may borrow $400 to $1,500 annually. The Foundation has raised $2,472,000 as a guarantee fund for the loans. Each dollar guarantees $12.50 in bank loans, thus providing a credit potential of more than $30 million. Loans are being made at the rate of 600 per month. Over 90 per cent of the total loan potential and accruable interest had been committed by the end of 1964.

Contributions still are needed to keep the program on a sound financial footing, says Foundation president Raymond M. McKeown, M.D., of Coos Bay, Oregon. It is expected that the program will be self-sustaining in four to five years, he said. New loans then will be offset by repayments. Borrowers already have repaid 384 loans, and are repaying another 2,167.

Medical students, interns and residents are eligible to participate if they are U. S. citizens and are enrolled and in good standing in full-time training at an approved American medical school or hospital internship or residency program.

Woman's Auxiliary News

President's Inaugural Address

It is a high honor to be elected president of the Auxiliary to the Iowa Medical Society. My predecessors have set high standards of performance, and it is not without humility and a real sense of purpose that I undertake my responsibilities. Mine is a stiff challenge, and I shall do my best to meet it directly.

Any Auxiliary has as its primary goal to lend a helping hand to its parent society. Our Iowa Medical Society, we modestly admit, has shown exceptional leadership in improving medical care and in meeting its ever-present legislative problems. Our Auxiliary has aided in those efforts, and it will continue to do so.

The chairmen of the Standing Committees know the importance of the programs that have been approved and encouraged by our Medical Society. Our committee chairmen need participation—time, effort, enthusiasm—from all Auxiliary members to assure the continuous growth and success of those programs.

Our varied undertakings are suited to individual interests and talents, and to particular communities. In the less populous places, a single endeavor is more pleasing and desirable than several of them would be.

All physicians' wives must be encouraged to join the Auxiliary.

Motivation starts with the individual. There must be an exchange of ideas and information, so that we may multiply our efforts and keep our husbands' profession preeminent in our time.

—Patti Boe
(Mrs. Henry Boe)

In Memoriam

Mrs. N. A. Schacht assisted by Mrs. C. O. Adams and Mrs. E. A. Vorisek, conducted the memorial service at the annual meeting, honoring the following:

Mrs. Glenn J. Hruska, Belmond
Mrs. G. Raymond Johnson, Ottumwa
Mrs. George J. McMillan, Fort Madison
Mrs. C. Robert Osborn, Dexter
Mrs. John L. Seabloom, Red Oak
Mrs. Robert S. Shane, Pilot Mound
Mrs. Leslie L. Smead, Newton
Mrs. Robert M. Wallace, Algona
Mrs. Loran Martin, Fort Dodge
Mrs. John Connell, Formerly of Des Moines.

Our National President Speaks

The following are excerpts from the address delivered by the National Auxiliary President, Mrs. William H. Evans, of Youngstown, Ohio, at the 36th annual meeting of the Woman's Auxiliary to the Iowa Medical Society. It will be reproduced in its entirety, and sent to county presidents to orientate them for future planning.

"As an Auxiliary, where *have* we been this year? Our national theme has been 'Better Health—Better World'; our goal, as always, is to aid our physician-husbands' work for the betterment of the public health. And through our many community service projects, the Auxiliary *has* made the nation more health conscious.

"Internally, we are striving to develop and train the Auxiliary's future leaders. At both the June convention and the Fall Conference, your national officers and chairmen aimed at setting a new pace and providing an example which each state Auxiliary might adopt. Through our revised BULLETIN, now sent to each Auxiliary member, we are increasing and improving communications at every level. We have completed plans for a new, larger 32 page bulletin with a new name. This will begin with the September issue.

"However, perhaps the biggest forward step—or, as our membership chairman terms it, the bold step—is the proposal of a joint husband-wife membership program. Through this, a physician's wife automatically becomes an Auxilary member when her husband joins his local medical society. Her dues are paid as a part of his society dues and then turned over to the Auxiliary.

"One of the most important committees in each Auxiliary is the nominating committee—and particularly on the state level, for here these committees are responsible for both state and national leaders. Yet, vital as this committee is, it doesn't usually function the year round. You who have served on a nominating committee—when did you start your work? The week before the convention? And were your approaches to prospective candidates hurried phone calls?

"Another excellent method of internal improvement is the conference or workshop where all your county presidents are gathered together to hear the state chairmen outline their projects for the year. The states that have adopted this program know how much can be gained on both sides, in both formal and informal discussions. This is a vital link in our chain of communication, for as state officers, you are the 'middlemen' for information, plans and materials. Your knowledge and your ability to convey this knowledge will spell the difference between accomplishment and a lack-luster year.

"And once you have established a program outline for the year, you are ready to 'sell' the Auxiliary to the medical society. It is up to you to take the first

step, by going to the society and learning what its plans for the year are . . . and how the Auxiliary may be of assistance. Meet with your advisory committee on a regular basis, and clear all your projects with them. Be sure to give them the full information on each idea, however, by pointing out the need for such a program, the way you intend to set it up and how it will benefit the community and the profession.

"We are reflections of our husbands, and because of this, we must seize these opportunities when they come our way. As an individual, no one is very important, but collectively there is great strength.

"Each of you, I am sure, participates in at least one non-medically related activity. It may be a church circle, a civic organization, garden club or women's club. These extra-curricular activities give you a magnificent opportunity not only to work for better health and better world, and speak for medicine, but also to identify yourself as an Auxiliary member.

"Or perhaps the group is considering undertaking a health-associated project. Volunteer to be the liaison with the local medical society, to find out what the needs of your area are and how they can best be met. Do not lose the Auxiliary's identity in local service projects. Take credit for what you do so your community will know.

"The Auxiliary is a unique organization, with unique qualifications for membership. And the responsibility for emphasizing this uniqueness rests with you, the leaders. If you go home after this meeting and enthusiastically report on the new ideas you gathered here . . . if you offer your local members new solutions to old problems and inspire them to undertake new projects . . . then you deserve the title of leader."

News From Around the Hawkeye State

Blackhawk County

The Blackhawk County Medical Auxiliary members were guests of the Waterloo District Dental Auxiliary for a lovely Valentine Brunch at the Holiday Inn. This social gathering was enjoyed by all who attended. Door prizes were given.

The annual Handicapped Craft Sale was held at Black's Department Store on March 11 and 12. Proceeds from this event were $365.00. Mrs. Dwight Conklin was chairman, and Auxiliary members were salesladies for this worthwhile project.

On Tuesday, March 16, the Auxiliary members were guests of the Medical Society at the Elks Club for a social hour and dinner. We were priviledged to have as speaker for the evening, Dr. Carl C. Byers, Ph.D., educator, lecturer and humorist, from Cleveland, Ohio. His speech titled, "Count Down for Happy Living," proved to be very entertaining.

—MRS. LOUIS WINNINGER, President

Buchanan County

In reviewing our year of Auxiliary work in Buchanan County, it is extremely difficult to single out one project above all others, for each seemed most successful and enjoyable to all members.

Our work has included contributions to HELF and AMA-ERF, special education, health careers, mental health, hospital auxiliary work, and work in the Medicare battle.

However, I believe our most rewarding and interesting new project of the year was International Health Activities. Realizing that our membership was small, numbering 18, we nevertheless felt it worthwhile to do what we could toward this cause. Our committee set to work contacting all county physicians, dentists, pharmacists and hospitals to state our cause and purpose. After contacts, telephone calls and trips to outlying communities, we were surprised and pleased to find the contributions weighed over 500 lbs. and far exceeded our budget for shipping costs. Needless to say, our Auxiliary membership quickly allocated additional funds to cover the deficit.

We feel proud of our achievements this year in Buchanan County, and we plan to continue each project now in force and to add new work each year.

—MRS. J. L. MOCHAL, President

Dallas-Guthrie County

Our present membership of 24 includes all eligible doctors' wives and widows. Our five dinner meetings each year are held jointly with those of the Medical Society, in the various towns in the two counties. The hostess in each town is responsible for the program. Frequently, we are privileged to hear the speaker who has been secured for the Medical Society's meeting.

We contribute to the Health Education Loan Fund and also to AMA-ERF through the sale of stationery, as well as with memorial gifts, both as an Auxiliary and as individuals. Also we participated in the Johnny Coat project and more recently in publicity for the Eldercare program.

Since our Auxiliary is made up of members from a number of small communities, it is quite impossible for it to accomplish a great deal as a group, but we feel that our individual efforts in local projects constitute a valuable contribution to good public relations.

—MRS. R. J. PETERSON, President

Johnson County

The Auxiliary to the Johnson County Medical Society finished its second year with 42 members, and with its treasury in the black, as the result of a successful garage sale.

Our prestige meeting was the January luncheon, when the State President, Mrs. Ellis, and the President-Elect, Mrs. Boe, were our speakers. Mrs. White, Mrs. Korson and Mrs. Lammey were also guests at that luncheon.

Our most informative session was the one we held in March, when Dr. F. H. Top, chairman of the State Board of Health, spoke to us on Public Health, which he defined as "the art and science of preventing disease, prolonging life and promoting physical and mental efficiency through

organized community effort." Some of the interesting facts he gave us about what goes on in the State of Iowa are:

There is a live birth every 9 minutes.
There is a death every 19 minutes.
There is a marriage every 28 minutes.
There is a heart death every 47 minutes.
There is a divorce every 1 hour and 51 minutes.
There is a cancer death every 1 hour and 59 minutes.
There is an illegitimate birth every 5 hours and 22 minutes.

This year's service of our Auxiliary was limited, and I hope that in the coming year we shall be able to do more than just selling AMA-ERF stationery and distributing AMA posters.

I believe that if the Auxiliary adds a new project and new members each year, interest will grow and we shall become a more vital, active organization in Johnson County.

—MRS. F. M. SKULTETY, President

Lee County (North)

Lee County (North) Auxiliary has completed a few projects since its January report and has a new project on its agenda.

In March our Auxiliary gathered over 100 pounds of used clothing, and Mrs. Frank Poepsel boxed and mailed it to Mary Jean Mertens, R.N., in Monte Vista, Colorado. Miss Mertens will see that the clothing is distributed to the Indians in Monte Vista.

On March 11, individual members of Lee County (North) Auxiliary assisted at the local annual crippled children's clinic. Mrs. Bernard Helling this year participated as a local co-ordinator chairman for the clinic. Other Auxiliary members assisted in various capacities.

Another March project was celebrating Doctors' Day. With Mrs. Robert Kent and Mrs. Jaime Polit as co-chairmen, the Auxiliary honored the Sacred Heart Hospital staff doctors at a morning coffee in the hospital cafeteria and presented each attending physician with a red carnation. Since Dr. George Harper was sick, a carnation was delivered to him at his home.

Mrs. Harold Werner, county mental health chairman, is making arrangements for our Auxiliary to visit the Iowa State Mental Hospital in Mount Pleasant sometime in May.

We are pleased to say that, to date, Lee County (North) Auxiliary has contributed $237.00 to AMA-ERF, and $10.00 to HELF.

Congratulations are in order to Dr. and Mrs. Lyle E. Adams on the birth of a baby boy, Sean.

—MRS. ROBERT E. MURPHY, President

Marion County

The Marion County Medical Society and Auxiliary made phone calls and radio announcements, and passed out hand bills to all homes in Knoxville, to alert people to watch KRNT on February 24, and hear Dr. Donovan Ward speak on "Eldercare." Everyone was urged to write his Congressman at once favoring "Eldercare."

On March 1, the Medical Auxiliary attended a workshop for Mental Health in Marion County, sponsored by the Marion County Extension Service, the Oskaloosa Mental Health Center, the V.A. Hospital and Knoxville Chamber of Commerce. The speakers included Mrs. A. C. Westerhof, executive director of the Iowa Association for Mental Health.

The regular meeting of Marion County Medical Auxiliary was held March 23, in the home of Mrs. Yme Sloterdyk, with Mrs. Leona Smith as cohostess. The meeting was conducted by Mrs. Sloterdyk, president. The order of business included the election of officers for 1965-1966, and Mrs. Robert McClung was named president.

At the close of the meeting, Mrs. Sloterdyk gave an interesting talk on "The Difference Between the Practice of Medicine in the U.S.A. and in Western Europe." Mrs. Sloterdyk's parents live at The Hague, Netherlands, and her father and brother are practicing physicians there.

The Auxiliary entertained their husbands on March 29 at a social hour at Dr. and Mrs. Sloterdyk's, and afterward had dinner with them at the Pine Knolls Country Club, honoring Doctor's Day. A red carnation was presented to each doctor.

—MRS. THOMAS D. CLARK, Publicity Chairman

Polk County

Doctor's Day: On March 30, 1965, Polk County Doctors, who are retired, or were confined to their homes because of illness, were visited by a committee of Auxiliary members, and were presented with a red carnation.

On April 9, 1965, the Auxiliary met at Broadlawns General Hospital. Following a delightful luncheon, courtesy of the Hospital, Mrs. Virginia Anderson, director of the Social Service Department, and Miss Helen Maloy, a social worker in psychiatry, gave most instructive and informative talks on our County Hospital. A tour of the Hospital conducted by Mrs. Edwin Vilimek and Mrs. Richard Ramsell, Broadlawns Guild members, concluded the meeting.

Iowa Medical Society Annual Meeting: The Auxiliary to the Polk County Medical Society was in charge of local arrangements for the State Auxiliary.

May Auxiliary Meeting: A brunch at the Wakonda Club is planned for May 14, 1965. New officers will be installed, and past-presidents given special recognition. A musical program "Musical Medics" will be presented by our own talented members, under the direction of Mrs. Daniel Glomset.

—MRS. D. W. COUGHLAN, President

Scott County

After three infant years of life, with incidental growing pains, the Scott County Medical Auxiliary is happy to report a paid membership of 82 out

of a possible 99—an increase of nine over last year. A large majority of our members are vibrantly active in community affairs, in impressive quantity and quality—a fact that was thought to preclude the organization of our Auxiliary. This continues. Our goal next year is to encourage more work and participation by more of our members. After this amount of time, we feel certain that the Medical Auxiliary has a definite and worthy role to play in our community.

The following Auxiliary activities have been performed since the president sent her yearly report.

Auxiliary members all contributed baked goods and many worked for the success of the Bazaar held by the St. Luke's Hospital Auxiliary. The proceeds from this event are to be contributed to the building fund for an addition to St. Luke's Hospital, already in progress.

Mrs. James Bishop, a Scott Auxiliary member and the councilor for District VIII, made five speeches on Eldercare at various Conversational Politics meetings in Davenport, sponsored by the Republican Women. She also represented the Medical Auxiliary at a Farm Bureau safety meeting held in the adjoining community of Walcott.

Our International Health Committee reports sending 29 "Johnny Coats." The shirts were donated by our members, and the work was completed by the ladies of the Edward Congregational Church.

Mrs. Bernard Goldman, state mental health chairman and her husband, the former Scott County Society's mental health chairman, appeared on a half-hour program on WOC-TV. The interview presentation concerning mental health was sponsored by Davenport's Junior Achievement group.

Though it is difficult to single out one of many worthwhile projects during the year, if one must do so, the Doctor-to-Doctor Christmas Greeting would be ours. In terms of the involvement of members and the dollars realized, it would have to be considered our most outstanding effort. This project has been used successfully by many Auxiliaries, and needs no detailed explanation. It has been received very enthusiastically in Davenport for the past two years. We were able to increase both the participation and returns the second year.

Fifty-two of our doctors and their wives contributed $15.00 each to have their names included on the greeting that was sent to all Scott County doctor's homes, and included the widows of former Society members living in Davenport. One of our members, Mrs. Erling Larsen, designed our very attractive and original card. "To Benefit the Scott County Mental Health Center" was inscribed on the card, and additional cards were printed and personalized for the use of our members and other persons interested in purchasing this type of greeting. Three thousand of this type were sold, and we were very fortunate to be able to turn over $846.00 to the Scott County Mental Health Center to use for its expanding purposes. This organization was recently relocated in the new Professional Arts Building.

—MRS. JOSEPH KEHOE, President

Wapello County

We have 45 active members in our group. Our Future Nurses Club is active, and the members are working regularly at both the Ottumwa and St. Joseph's Hospitals. We had six entries in the Essay contest, through diligent work and contacts.

The Wapello County Medical Society asked for help from both registered nurses and clerical personnel in its immunization clinic, which has just started. We plan to assist.

—MRS. W. W. IRELAND, President

Woodbury County

I bring you greetings from Sioux City—and the Woodbury County Auxiliary. We call ourselves "Sioux Med Dames."

Our group is composed of 98 attractive, intelligent, and community-minded ladies. Almost every doctor's wife has spearheaded some community drive or hospital auxiliary fund drive. Many members are active in Junior League, and many also have served on various welfare boards through the city. Even our present mayor, Dr. James Reeder, Jr., is a physician. So you can see the medical profession is very civic minded in Sioux City.

We all banded together as an Auxiliary to make a success of the Handicapped Craft Sale. Incidentally the Handicapped Sale had its beginning in Sioux City, in 1947. We held our sale last November, and cleared $890.00.

In February we were hosts to the Sioux Valley Medical Meeting. Doctors were there from Minnesota, Nebraska, South Dakota and Iowa.

—MRS. H. E. RUDERSDORF, President

Worth County

The Woman's Auxiliary to the Worth County Medical Society has a 100 per cent membership even though we number only six. Because of our size, our undertakings are rather limited, but we do enjoy working together in aiding our husbands whenever possible. We look forward to assisting them in their county-wide immunization programs, which they sponsor regularly. We help with the blood bank whenever the Red Cross Bloodmobile is in our vicinity. We are represented on the County Cancer Board and the Board of the North Iowa Mental Health Center, and all are members of the Worth County Association for Retarded Children. This year we distributed essay material to the high schools of the county, nominated a candidate for the Volunteer Service Award, displayed health posters, subscribed 100 per cent for the Health Careers Fund and the AMA-ERF, and gave $5.00 to the Jane King Memorial Fund of HELF.

We have one social meeting with our husbands

each year, and this past year our Auxiliary was entertained by the Cerro Gordo Auxiliary.

We are very proud of the fact that one of our members is a past-president of the Woman's Auxiliary to the Iowa Medical Society.

—MRS. M. P. ALLISON, President

We Need News

Mrs. Joseph Veverka, Prairie City, has accepted appointment as AUXILIARY NEWS editor, and Mrs. Rodney Carlson, Ankeny, has been appointed her co-editor. If they are to maintain an interesting publication, cooperation from county presidents, and committee chairmen is essential. In reporting any and all news, please be sure it reaches one or the other of them no later than the fifth of each month.

State Dues

The 1965 House of Delegates voted the recommended a $1.00 increase in State Auxiliary dues, effective immediately. This addition brings your state dues to $3.00 per year.

Woman's Auxiliary to the AMA

NEW YORK, N. Y., JUNE 20-24, 1965

Rep. Catherine May (R., Wash.) and Mr. Harold Russell, chairman of the President's Committee on the Employment of Handicapped, will be the featured speakers at the annual convention of the Woman's Auxiliary to the American Medical Association, in New York.

More than 2,000 doctors' wives are expected to attend the June 20-24 meeting at the Americana Hotel. The Auxiliary president, Mrs. William H. Evans, Youngstown, Ohio, will preside.

On Monday, June 21, Mrs. May will speak at a luncheon honoring leaders of 75 national women's volunteer organizations and the wives of AMA's international guests. The program will also feature a presentation of costumes from foreign countries.

Following the luncheon, a forum on the cost of illness will be presented, and Mr. Russell, who won an Academy Award for his movie portrayal of a handicapped veteran, will discuss new frontiers for the handicapped.

Also appearing on the Monday program will be Dana Farnsworth, M.D., Harvard University, a member of the AMA Council on Mental Health. Reports on Auxiliary activities in international health and health careers will round out the sesson.

Activity reports from the 50 states Auxiliaries will open the Tuesday, June 22, meeting. The presentation of the annual Health Mobilization Award for disaster preparedness programs, and reports on the Auxiliary's safety and rural health projects will complete the agenda for the day.

AMA President Donovan Ward, Dubuque. Ia., will be guest speaker at the Tuesday luncheon honoring Auxiliary past-presidents and AMA officers and trustees and their wives. Jack Schreiber, M.D., a member of the AMA Speakers Bureau, will be master of ceremonies. At that time, the Auxiliary's annual contribution to the American Medical Association Education and Research Foundation will be announced. Last year's gift was $306,-318.14.

Mrs. Evans and Mrs. Richard A. Sutter, St. Louis, Mo., the president-elect, will be honored at a tea and fashion show Sunday, June 20. Miss Eleanor Lambert, director of the Ten Best Dressed American Women Awards, will be the commentator.

Mrs. Sutter will be installed as president at the concluding business session, Wednesday, June 23. Election and installation of other national officers will be held then.

The 1965 Annual Meeting

The 36th Annual Meeting of the Woman's Auxiliary to the I.M.S. was held on April 12 and 13, at the Hotel Kirkwood, Des Moines, with Auxiliaries in the Central Area (Districts II, V and X) serving as hostesses. Mrs. D. A. Mater, of Knoxville, was area chairman, and Mrs. G. S. Marquis, of Des Moines, local chairman. Mrs. Olin A. Elliott, of Des Moines, had charge of registrations, assisted by members of Polk County Auxiliary.

On Sunday evening, April 11, members of the Board and honored guests were entertained at a Dutch treat supper in the home of Dr. and Mrs. Noble W. Irving, with Dr. and Mrs. Daniel W. Coughlan serving as co-hosts.

We were honored to have as special guests Mrs. William H. Evans, National President of the Woman's Auxiliary to A.M.A., from Youngstown, Ohio; Mrs. John Dickie, of Toledo, president of Ohio Woman's Auxiliary; Mrs. John A. Brown, II, of Lincoln, president of Nebraska Woman's Auxiliary; and Mrs. J. Whitney Kelley, of Omaha, president-elect.

Mrs. Howard G. Ellis, the Iowa Auxiliary president, had selected "Achievement Through Knowledge" as the theme for the 36th Annual Meeting.

The first business session opened Monday morning, April 12. After presentation of Annual Meeting agenda, we heard highlights from our county presidents entitled, "We Speak with Pride." Those were followed by a very informative and interesting talk on "Medical Ethics for Physicians Wives," by Mr. Robert Throckmorton, legal counsel for A.M.A. (Excerpts from his speech will appear in the following issue of WOMAN'S AUXILIARY NEWS.)

At the noon luncheon past state presidents, board members and special guests were honored. We

were privileged to hear Mr. Frank Wooley, of the field service division of A.M.A., who enlightened us with a dynamic talk on "What's Happening in Washington." He reviewed briefly the Federal Comprehensive Medicare Program, which had been passed by the House, and will now come up for consideration in the Senate, with emphasis on particular facets of this bill which will affect the practice of medicine and the *current* high level of patient care. He also discussed the method of financing this Program, the cost to the wage earner and the utilization of insurance portion of the bill. He further stressed the vital importance of doctors' wives' being well informed.

Auxiliary members and guests then enjoyed the Workshop Clinic Program, entitled "Have You Tried This?," presented by the chairmen of standing committees:

"It's Fun to Make Money"—Mrs. Ralph Wicks
"On the Street Where You Live"—Mrs. Noble Irving and Mrs. H. C. Merillat
"This Is Your Future"—Mrs. George Paschal
"The Hand That Helps"—Mrs. E. A. Larsen
"The Beautiful American"—Mrs. F. P. Ralston
"Rally Round the Cause Girls"—Mrs. R. F. Nielsen
"Getting to Know You"—Mrs. S. M. Korson
"Who Has Problems"—Mrs. B. R. Goldman
"Toot Your Horn"—Mrs. J. F. Throckmorton and Mrs. J. G. Thomsen
"Down on the Farm"—Mrs. S. P. Leinbach
"Plain Talk for Living"—Mrs. H. A. Weis

A fitting climax to an enjoyable afternoon was the fur, suit and coat fashion show presented by Cownie Furs, with models from our Auxiliary. The door prize was a mink boa, won by Mrs. Ralph E. Hines, of Des Moines. There followed a tea honoring Members-at-Large, our national president, Mrs. William H. Evans, and other guests.

At the second business session on Tuesday morning, all By-Law amendments were approved, as was the recommended $1.00 increase in state dues. The Memorial service was presented by Mrs. N. A. Schacht, of Fort Dodge, assisted by Mrs. E. A. Vorisek, of Des Moines, and Mrs. C. O. Adams, of Mason City.

Our national president, Mrs. William H. Evans, then presented her message to the Auxiliary. This was followed by an encouraging word from the president-elect of IMS, Dr. Frank Ober, chairman of Auxiliary Advisory Committee, in which he complimented the outstanding leadership, ability, and a job well done by our President, Mrs. Howard G. Ellis, as well as accomplishments by all of our county Auxiliaries.

The following newly elected officers were installed by our national president, Mrs. William H. Evans:

President ..... Mrs. Henry Boe, Sioux City
President-elect ..... Mrs. S. M. Korson, Independence
1st Vice President ... Mrs. R. E. Hines, Des Moines
2nd Vice President .. Mrs. M. E. Olsen, Minden
Recording Secretary . Mrs. L. H. Prewitt, Ottumwa
Treasurer ..... Mrs. B. M. Merkel, Des Moines
Councilors:
District III ..... Mrs. A. Bushmer, Orange City
District VII ..... Mrs. F. M. Skultety, Iowa City

During the Tuesday luncheon, tribute was paid to our retiring president, Mrs. Howard G. Ellis, and special guests were introduced. Awards in the essay contest were presented by Dr. O. D. Wolfe, president of IMS. First prize of $100.00 went to Paul Raymond, of Boxholm; second prize of $50.00 to Rebecca Jean Good, of Boone; and third prize of $25.00 to Rick Peterson, of Harlan. All three contestants had chosen the topic, "The Advantages of the American Free Enterprize System Over Communism." Mrs. O. A. Elliott, chairman, then presented the Voluntary Health Service Award for the year to Mrs. Vernon C. Schroeder, of Des Moines.

Next came a most commendable panel discussion on medicine and religion entitled, "The Physician, The Clergy, and the Terminal Patient." Dr. Otto Glesne, chairman of the IMS Committee on Medicine and Religion, introduced the panel, as follows: Dr. Louis Valbrracht, St. John's Lutheran Church; Rabbi Irving Weingart, Tifereth Israel Synagogue; Father Carl Meier, St. Ambrose Cathedral; Dr. Richard Liechty, Iowa City; and Dr. Paul Cash, Des Moines. The panel moderator was Mr. Arne Larson, assistant director, Department of Medicine and Religion, AMA. This discussion indeed was the "pearl" of the afternoon session.

The gala finale to the 36th Annual Meeting was the IMS President's reception, the banquet, and the "Caduceus Capers" benefit dance for Woman's Auxiliary Health Educational Loan Fund, held at Hotel Fort Des Moines.

We all join in a great vote of thanks to our area chairman, Mrs. D. A. Mater, and her excellent committee, for being such fine hostesses. The beautiful table decorations, and sacks of "goodies" were secured from numerous pharmaceutical houses exhibiting at the IMS Annual Meeting.

Also, our thanks to Mrs. G. M. Marquis, local arrangements chairman. Last but not least, our gratitude and sincere appreciation to our retiring president, Mrs. Howard G. Ellis, for her untiring efforts, leadership, inspiration, and guidance throughout this past year.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

President-Elect—Mrs. S. M. Korson, Box 111, Independence 50644

Recording Secretary—Mrs. L. H. Prewitt, 33 Birchwood Hills, Ottumwa 52501

Corresponding Secretary—Mrs. H. C. Leiter, 2400 E. Solway, Sioux City 51104

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Veverka, Prairie City 50228

Co-Editor—Mrs. R. R. Carlson, 826 Sherman Drive, Ankeny 50021

JOURNAL of The IOWA MEDICAL SOCIETY

U.C. MEDICAL CENTER LIB
JUN 11 1965
San Francisco 9412

IN THIS ISSUE

- Morality and the Welfare State
  The President's Address—Page 297
- Respiratory Syncytial Virus Infection—Page 301
- Management of Pain in Anorectal Surgery—Page 310
- Transfusion Hemosiderosis—Page 312
- U. of I. College of Medicine Clinical Pathologic Conference—Page 316

JUNE, 1965

Russian Thistle
(Salsola pestifer, A. Nelson)

Distress for Allergic Patients

Benadryl®
(diphenhydramine hydrochloride)
PARKE-DAVIS

To Combat Symptoms of Weed-Pollen Allergy

This time-tested agent provides two actions that effectively combat symptoms of seasonal allergy: *Antihistaminic*—relieves sneezing, nasal congestion, itching, and lacrimation. *Antispasmodic*—relieves bronchial and gastrointestinal spasm. **Precautions:** Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this product. Hypnotics, sedatives, or tranquilizers, if used with BENADRYL, should be prescribed with caution because of possible additive effect. Diphenhydramine has an atropine-like action which should be considered when prescribing BENADRYL. **Side Effects:** Side reactions, commonly associated with antihistaminic therapy and generally mild, may affect the nervous, gastrointestinal, and cardiovascular systems. Most frequent reactions are drowsiness, dizziness, dryness of the mouth, nausea, and nervousness. BENADRYL is available in Kapseals® of 50 mg. and Capsules of 25 mg. diphenhydramine hydrochloride. The pink capsule with the white band is a trademark of Parke, Davis & Company.

PARKE-DAVIS
PARKE, DAVIS & COMPANY, Detroit, Michigan 48232

72665

LACTINEX®

TABLETS & GRANULES

to help restore and stabilize the intestinal flora

for fever blisters and canker sores of herpetic origin

LACTINEX—a viable culture containing both *Lactobacillus acidophilus* and *L. bulgaricus*—was first introduced to help restore the flora of the intestinal tract in infants and adults.[1, 2, 3, 4]

Further clinical work showed LACTINEX to be successful in the treatment of fever blisters and canker sores of herpetic origin.[4, 5, 6, 7]

No untoward side effects have been reported in 12 years of clinical use.

Literature on indications and dosage available on request.

(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

HYNSON, WESTCOTT & DUNNING, INC.

(LX02)

HW&D BALTIMORE, MARYLAND 21201

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV JUNE, 1965 No. 6

CONTENTS

Morality and the Welfare State
Otis D. Wolfe, M.D. 297

SCIENTIFIC ARTICLES

Respiratory Syncytial Virus Infection
F. Howell Wright, M.D. 301

Management of Pain in Anorectal Surgery
Ralph H. Riegelman, M.D. 310

Transfusion Hemosiderosis
D. T. Kaung, M.D. 312

U. of I. College of Medicine
Clinical Pathologic Conference 316

EDITORIALS

Our Youth Problem 324

Back to Nature! 325

Shortcomings of Omaha Immunizations . . . 325

Meningococcal Meningitis 326

SPECIAL DEPARTMENTS

President's Page 329

Journal Book Shelf 330

Iowa Chapter of the American Academy of General Practice 332

Coming Meetings 337

Iowa Association of Medical Assistants 338

In the Public Interest . . . . . facing page 338

State Department of Health 339

The Doctor's Business 344

Woman's Auxiliary News 345

The Month in Washington xviii

Personals xx

Deaths xxxiv

MISCELLANEOUS

Tell Children the Truth 300

Untoward Reactions to Drugs Used in Initial Chemotherapy of Cavitary Tuberculosis . . 332

Preventive Treatment in Tuberculosis 335

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor.....Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D.....Iowa City
Floyd M. Burgeson, M.D.....Des Moines
Daniel A. Glomset, M.D.....Des Moines
Robert N. Larimer, M.D.....Sioux City
Daniel F. Crowley, M.D.....Des Moines

PUBLICATION COMMITTEE

Cecil W. Seibert, M.D.....Waterloo
John H. Sunderbruch, M.D.....Davenport
Kenneth E. Lister, M.D.....Ottumwa
Richard F. Birge, M.D., Secretary.....Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

Morality and the Welfare State

The President's Address

OTIS D. WOLFE, M.D.
Marshalltown

APPROXIMATELY 100 years ago, Karl Marx advanced the concept that the ideal government should take "from each according to his ability" and give "to each according to his needs."

Although most Americans would deny that they or their governments subscribe to Marx's theories, every nation in the world today accepts this principle, the difference being only in the degree of application.

In the past 30 years we have witnessed an accelerated adaptation to Marx's policies, and are on the threshold of accepting total "cradle-to-the-grave welfare," or "welfare statism" as a way of life.

The purpose of this presentation is to explore the morality of the Welfare State.

We shall first define the Welfare State and its morality, discuss the consequences of Welfare State morality, and conclude with what appears to be the challenge.

WHAT IS THE WELFARE STATE?

Throughout the contemporary world there are only two basic economic systems—*private capitalism* and *state capitalism*. Few nations adhere strictly to either one mechanism or the other, and most of these subscribe to what Marquis Childs has called the "middle way," which endeavors to straddle private and state capitalism. However, these middle-of-the-road mechanisms are invariably only transient systems that either collapse, or progress to complete state capitalism.

Private capitalism is also called "free enterprise" or just "capitalism." The latter is a maligned word in many parts of the world, and in many of the so-called "liberal and enlightened" strata of our own country. Capitalism requires no definition or explanation, for Western Civilization knows it as the system responsible for its affluence and abundance.

For obvious reasons the term *state capitalism* is rarely used by its followers. It includes a horde of "isms" which have one thing in common. All use the coercive power of government to regulate the creative activities of the people. The coercive mechanism may be police surveillance, the power to tax, majority rule, or government by consensus. Any of these can be equally effective in repressing creative activity.

Whatever name is applied to this coercive system is insignificant, for the system accomplishes the same thing, whether the form of government be called fascism, communism, socialism, welfare statism, or "The Great Society."

For example, the East German communist government is called the German Democratic Republic. The official name of the German Nazi Government was the National Socialist German Workers' Party.

WHAT IS MORALITY?

To define morality would seem somewhat superfluous, but its true meaning penetrates to the very heart of our discussion. *Morality* is derived from the Latin word *mores* which means customs. Morality, then, means customary and correct conduct within a society. Ethics, on the other hand, denotes moral conduct, as expressed in a system or code.

In order that we may anticipate a reliable response and course of action from others in given circumstances, a universal standard of morality is preferable to an *ad hoc* determination in each situation. The purpose of morality is to develop a system of conduct that minimizes conflicts between individuals, maximizes social cooperation, and mutualizes man's alleged "egoism" with society's desire for "altruism."

A. *Classic Western Standards:* Between the various ideologies there is little conflict concerning the definition or purpose of morality. The controversy begins with the consideration of its origin and its authority.

The classical Western standards of moral conduct and principle are usually found in one or more of three categories: (1) Natural Law, (2) Reason, and (3) Human Nature. All three concepts are illustrated in the Judaeo-Christian ethic. This dogma holds that man is endowed by his Creator with a conscience which enables him to originate and control his behavior and assume responsibility, not only for his actions, but for the consequences of his actions as well.

From this doctrine has emerged many of the superb achievements and documents of western

culture. The second paragraph of the Declaration of Independence says:

> "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain inalienable Rights, that among these are Life, Liberty, and the pursuit of Happiness. . . ."

This paragraph does not refer explicitly to moral conduct, nor does it guarantee happiness, but it implies clearly that given life and liberty, man is capable of designing his own approach and route to happiness.

B. *Welfare State Standards:* Before discussing welfare state morality, it is imperative for us to recognize the difference between the doctrinaire welfare statists, and the camp followers. The latter include political opportunists, bureaucratic empire builders, economically frustrated intellectuals, a host of parasites looking for hand-outs, and the naive.

Welfare statists, as such, cannot be arbitrarily classified as communists, fascists, or socialists, but all communists, fascists, and socialists may be classified categorically as welfare statists, because the Welfare State is the umbilical cord for all forms of statism.

The differentiation between the various forms that use welfare statism as their "raison d'etre" is made difficult by the contradictions of their respective advocates. For example, George Bernard Shaw said that a communist is a socialist with the courage of his convictions. This contrasts with the statement of a liberal member of the U. S. Supreme Court who said,

> "The sound direction of the counter movement to Communism in the democracies . . . is the creation of the human Welfare State—the great political invention of the 20th Century."

To paraphrase a well-known French adage "The more the various forms of statism pretend to differ, the more they remain the same." The morality of all forms of statism is similar because all of them have a common root in Marx's contention that "it is not the consciousness of man that determines his social existence," but on the contrary, "it is his social existence which determines his consciousness." In other words, man owes his being to society, and exists for the benefit of society. Nothing could refute Western morality more succinctly, but, the statist contrives with the social scientists to complete the job.

The moral relativist challenges all three of Western Man's categories for moral conduct. He dismisses God as non-existent, he rejects reason because it cannot be absolute, and he denies that human nature is more than the reflection of social environment and education.

He alleges that man is born with a totally *blank slate,* upon which absolutely anything can be written. Man's mind, it is said, is not related to God, to reason, or to human nature, but to his senses. The claim is made that there is nothing innate in man except the capacity to receive and to react to stimuli, and that man's desires are totally related to the experience of pleasure.

To explain the scientific basis for man's conduct, statism looks to the experimental psychologists. Many of the latter insist that all animal behavior, including that of man, can be accounted for on a basis of instinct and conditioned reflex. Through conditioning it is possible not only to predict man's behavior, but to control it, and make it appear voluntary by rewarding those actions that please the conditioner.

According to the blank-slate viewpoint, nothing is absolutely better than anything else, except as it brings pleasure to man. On this basis, morality is nothing more and nothing less than those standards and customs which the majority approve or admire, and these standards and customs can be conditioned by society, by the majority, or even by an effective minority.

Thus, the positive concept of morality under the Judaeo-Christian ethic is displaced under walfare statism by the negative concept of a blank slate as man's total moral heritage.

This statement would seem to accomplish little more than to rephrase the perpetual conflict between science and religion, or between reason and faith, except that our objective is different. At least for the present, we are not concerned with the validity of either the Judaeo-Christian ethic, or the Welfare State ethic. We are concerned with recognizing that their origins and postulates are based on different and incompatible conceptions.

With this in mind, let us now turn to the consequences of Welfare State morality, bearing in mind that the total essence of morality is that conduct which best contributes to social cooperation.

CONSEQUENCES OF WELFARE STATE MORALITY

What happens to man in the Welfare State was well described by Alexis de Tocqueville in the 1830s:

> "The will of men is not shattered but softened, bent, and guided. Men are seldom forced by it to act, but they are constantly restrained from acting. Such a power does not destroy, but it prevents existence.
>
> "It does not tyrannize, but it compresses, enervates, extinguishes, and stupefies a people. . . ."

In 1950, Sir Ernest Benn attempted to warn Americans with this plea:

> "Collective action and the machinery of government cannot replace the normal and natural responsibilities of able men. This idea, as we know only too well in Britain, is the open road to disaster. It changes persons with responsibilities into robots with rights.
>
> "The Welfare State is not a system at all; it is

a disease. The something-for-nothing complex is, in fact, an economic and moral cancer.

"In the process of our sloppy sentimentalism, we have murdered old virtues with new deals. Well-meaning, shallow-thinking, kindly people, aware of the scriptural injunction that 'the greatest of these is charity' have failed to notice the distinction between the real article and the giving away of other people's money.

"So, having lost our faith, we come to the end of the story; we have accepted false hopes and practiced a charity which is nothing of the kind."

John Stuart Mill said, "a State which dwarfs its men, in order that they may be made more docile instruments in its hands, even for beneficial purposes, will find that with small men no great things can be accomplished."

In the transition from a religious to a welfare state, whether the change be abrupt or gradual, there is a dramatic shift of authority which has a profound impact on moral values.

Under religious dominion, there is one principal and omnipotent authority. All other authorities emanate from the Deity, and filter through the various jurisdictions of churches, governments, institutions, homes, and eventually to the individual. Responsibility, on the other hand, flows in the opposite direction, originating with the individual and terminating with his God, who made him capable of being responsible.

Thomas Davidson said, "That which is not free is not responsible, and that which is not responsible is not moral." This means that to commit a moral act, one must be free to choose between moral and immoral options. Also, this choice carries with it the responsibility not only for the act, but for the consequences of the act as well.

In the Welfare State, authority, responsibility, choice, and morality are secularized, and become the prerogatives of the state. The state assumes responsibility for indiscretion, imprudence, and even criminal acts. The moment society or government assumes the obligation for the economic responsibilities of the individual, it assumes at that very moment the moral responsibilities of the individual. The Welfare State likes it this way. Economic dependency means moral dependency, and it is easier to control a dependent mind than a free one.

In this moral caldron, man witnesses strange paradoxes and caricatures. He finds himself cast into a world without logic, order, consequence or even justice. The Ten Commandments, he finds, are subject to compromise. It is wrong to take from another by force unless majority rule makes it legal, or unless the contraband is used for a worthy purpose. The adolescent interprets this as jungle rule, and practices it according to his own standards.

The previously religious man finds that he can break away from natural law by economic or moral indiscretion, and that society will cover for him. He once learned that evil means beget evil ends, but he is now taught that good ends can be attained by evil means provided that the end is collectivism. And so he passively accepts the secularization of moral injunction, and the removal of prayer and religion from his schools, and he finds that his children come to the conclusion that there is something spurious and invalid about religion.

He learns to accept unethical conduct in high political places, and to expect graft as a political way of life. He is not only encouraged to break the law when it differs with his political beliefs, but discovers that the highest courts in the land will endeavor to free him on a technicality, if he should be convicted.

He witnesses nationwide crusades and demonstrations to achieve the unrestricted right to vote, and simultaneous apathy and complacency about murder in our subways and rape on our streets.

The tumult of moral conduct also influences the arts. Beatle music overshadows the symphony; abstract impressionism replaces classic art; sensationalism and pornography permeate the newsstand, and sex captivates the cinema.

Whether by design or by consequence, the moral direction of the Welfare State is a revolution against establishment, and the end result is an ethical wilderness.

CHALLENGE TO PHYSICIANS

From this abyss of immorality has erupted Medicare or H.R. 6675. After some 17 years of maneuvering, propaganda, and conditioning, the architects of collectivism finally appear to have their foot in medicine's doorway. They haven't even waited for majority opinion to respond to conditioning. The effective, organized minority will shape public opinion by the art of skillful pampering.

Note this evidence of the successful conditioning of physicians to welfare state morality—much lament, considerable reaction, but virtually no organized resistance to participation. Fifteen years ago 75 per cent of the physicians would have been self-appointed organizers for resistance.

At least for the present there is little evidence that there will be any significant non-participation when, and if, H.R. 6675 becomes a law. If Medicare becomes the law of the land, and physicians elect to accept the system, both the patient and the physician could become economic and moral dependents of the Welfare State.

However, it is possible to retain some semblance of freedom for both the physician and patient if the following three principles are preserved.

1. ABSOLUTE PHYSICIAN UNITY
2. INDIVIDUAL RESPONSIBILITY Applicable to both physician and his patient

3. USUAL AND CUSTOMARY FEE CONCEPT in negotiations with all third parties, public and private.

In the meantime, before resigning to utter despair as to whether man, or society, is going in the right direction, or whether there even is such a thing as a good moral life apart from custom, let us reconsider man's so-called blank slate. If the Judaeo-Christian ethic is out-dated, isn't there some alternative to the blank-slate concept of man? Do instinct and conditioned reflex account for all man's behavior? Is there something which we call human nature that is resistant, or even immune, to some conditioning? In all the different cultures of man, isn't there something which they held in common?

Joseph Krutch believes that man's so-called blank slate may indeed have some latent pattern analogous to the potential image on a photographic plate. The image is not distinguishable, or even perceived, until it is developed; but when developed, it will reveal only that which is already there.

It is possible to overlay the lines on the photographic plate and make the unnatural seem natural, and the unattractive seem attractive, but the conditioner cannot perpetrate his deceit forever. Two and one half centuries ago, Alexander Pope wrote:

"Nature affords at least a glimmering light
The lines though drawn but faintly
Are drawn right."

This development of man's image on the photographic plate requires light—not just any light—but a light of certain quality and intensity. Maybe this also applies to the physician's image. It has had a lot of illumination but of the wrong quality.

Have you noticed that prior to every legislative attempt to nationalize some phase of medical care, there are certain leftist magazines that can be counted upon to come forth with a scathing diatribe against the entire medical profession, and/or the American Medical Association?

In spite of this, the physician's image remains good. People still respect their doctors, even at a time when the physician cannot possibly devote the personal time to each of his patients that he would like. But this image will be under attack as long as the Welfare State can wring freedom from its bosom, and the quality of the light used will be that quality necessary to get the job done.

If we are to preserve the true image of medicine, we shall have to produce our own light—the light of truth. We may not be able to illuminate the whole world, but we can certainly brighten the corner where we are; for all the darkness in the world cannot extinguish the light from one wee candle.

The alternative is the blank-slate image of the Welfare State. Somehow this doesn't look good on physicians.

What appears to be adversity may be our opportunity. Let's get our light our from under the bushel. It doesn't take great men to do great things. It takes only dedicated men.

Whatever needs to be done, let's do it while we are hot. We stay cold for a long time.

Tell Children the Truth

What do you tell the child who is fatally ill? Tell him the truth, suggests an article in the May issue of AMERICAN JOURNAL OF DISEASES OF CHILDREN. Children are remarkably perceptive, and they almost invariably know when something is being kept from them. When the secret is that they have incurable leukemia, the results can be saddening as well as difficult.

"Who's Afraid of Death on a Leukemia Ward?" is the title of the article by Joel Vernick, M.S.W., group program supervisor of the Social Work Department, Clinical Center, National Cancer Institute, National Institutes of Health, and Myron Karon, M.D., senior investigator and chief pediatrician of the Institute's Medicine Branch.

They found that 51 children, aged 9 to 20 and all hospitalized for acute leukemia, reacted with very little anxiety and often with a sense of relief when told of their fatal illness. "When the physician gives the fateful news to the parents, the child immediately 'knows' that he has something very serious," the report said. "His parents, no matter how hard they try, cannot conceal their own grave concerns. The child quickly senses that the people whom he had come to trust and love are keeping something from him, something frightening."

A 16-year-old boy was not told his diagnosis by his mother until 12 hours before he died. The mother had found it extremely hard to communicate with her son through the six months of his illness. When he asked her point-blank if he had leukemia, she finally told him.

The Institute hospital staff realized that most of the 51 children studied in this report had some knowledge of the seriousness of their illness. Some knew exactly what was wrong, and all 51 had worried, the report said. "Firm in this knowledge, the staff was able to abandon the traditional tact of 'protecting' the child from worry . . . and became actively involved in helping the children cope with the serious concern which every study, so far reported, has indicated exists."

The results of the program were gratifying, the report said. "Every one of the 51 patients was able to function normally. The withdrawal and depression so often observed by others . . . occurred very infrequently."

"Who's afraid of death on a leukemia ward?" the report asks. "Everyone—and the resolution of this fear is everyone's problem."

Scientific Articles

Respiratory Syncytial Virus Infection

F. HOWELL WRIGHT, M.D.
Chicago, Illinois

THE RESPIRATORY APPARATUS of man has the life-maintaining function of conducting a continuous supply of oxygen to the internal tissues, but it also functions as an air-sampling device in which the particulate matter of the gaseous environment is filtered out by the surface epithelium. It is inevitable that an infant will eventually encounter infectious agents, as he widens his sphere of activity in the social environment. It is understandable, too, that when he first encounters some of these agents, his local and systemic defenses may prove unable to protect him against disease. Consequently, pediatric practice always has been—and perhaps always will be—preoccupied with the care of young children suffering from infections of the respiratory passages.

Until a century ago, knowledge of infectious disease was entirely empiric. The collective experiences of some very astute clinicians had delineated the symptoms, physical findings and courses of the classical disorders such as smallpox, diphtheria, measles, pertussis and scarlet fever. But a knowledge of the agents responsible for transmitting infection was lacking until the birth of bacteriology as a science, during the second half of the Nineteenth Century. Then within a few decades came the rapid discovery of bacterial organisms and the development of technics and concepts that clarified their relations to human disease. It became possible to identify etiologic agents with precision; to separate immune from non-immune individuals; to understand the role of apparently healthy persons as carriers of disease; to fabricate materials for both passive and active protection against specific bacteria; and finally, in the past 30 years, to discover poisons that destroy bacteria while sparing the host. As a consequence, many of the life-threatening commonplaces of my intern days have been rendered as obsolete as are the clipper ships.

Progress in understanding the viral agents responsible for respiratory disease had been delayed because the methods required for their study were cumbersome and expensive. But in the last 10 or 15 years, the technic of growing viruses upon sheets of cultivated animal or human tissues has opened Pandora's box and exposed a profusion of new agents whose roles in respiratory disease must now be studied and critically analyzed. Even though these new technics have already identified nearly 100 different virus strains that are associated with respiratory illness, it is probable that still others will be discovered through the induction of new tissue-culture cell lines, and the permutations of the chemical and physical conditions of growth in the media. Thus, in the viral field, the latter half of the Twentieth Century will surely surpass the great advances that the corresponding portion of the Nineteenth Century made in our comprehension of bacterial pathogens.

From the welter of new agents, I have selected as my topic the respiratory syncytial virus because it seems to have a clearly defined place in the family of respiratory pathogens. My interest is in part that of a practicing pediatrician, and in part that of a paternalistic observer of the laboratory developments. One of my former students and associates, Dr. Robert Chanock, now at the National Institutes of Health, has provided a significant part of the national leadership in the study of these new viral respiratory agents. To another of my former students and a current associate, Dr. Marc Beem, I am indebted for permission to present the data from our department. Indeed it

Dr. Wright is a professor of pediatrics at the University of Chicago, and he made this presentation at the Pediatric Conference of Blank Memorial Hospital, in Des Moines, on April 11, 1964. His project is supported by USPHS Grant No. HD 00289-07.

is he who deserves all the credit for organizing the laboratory and collecting and analyzing the data.

THE VIRUS

The respiratory syncytial virus (RS) was first discovered by Morris, Blount and Savage in 1956[1] as the cause of an epidemic of colds in their colony of chimpanzees. Its original name "chimpanzee coryza agent (CCA)" was soon abandoned in favor of the current eponym, because of the characteristic appearance which it produces in tissue culture. Human infection was first recognized in a caretaker of the chimpanzee colony who became infected and was observed to have a rise in specific antibody titre in his blood. During the following year, Chanock and his group[2] recovered the same agent from sick children in the wards of the Children's Hospital of Washington. To date, man and the chimpanzees are the only recognized natural hosts, and the agent has been grown only in cell lines derived from the same species. However, it is possible to produce an antigenic response without disease in laboratory animals such as the rabbit and the guinea pig—a fortunate convenience for the production of specific antisera. In the ferret, mink and marmoset, a local infection of the nasal mucosa can be established which produces no recognizable disease in the animal, but which can be transferred from animal to animal, producing characteristic histologic lesions.[3] For practical purposes, however, RS infection is limited to man and the anthropoid apes.

To isolate the virus, secretions from the respiratory tract are collected on cotton swabs, are immersed in a buffered salt solution containing animal serum and bacterial antibiotics, and then are transferred to the tissue-culture medium. Beem[4] has shown that recovery of virus in low concentration is facilitated by a rapid direct inoculation of the medium, and is hampered by preliminary freezing, storage and thawing. Cell lines which have proved receptive include human amnion, human kidney, human epithelial carcinoma and monkey kidney. Within a few days to two weeks after primary inoculation, the presence of RS virus is announced by changes in the morphology of the tissue sheet, which can be observed with the low power of the light microscope (Figure 1). As the virus becomes adapted by serial transfers to fresh media, its titre-increase accelerates, and the characteristic changes become well developed within 48 hours. The regularity of the size and shape of the cells becomes distorted by the appearance of holes in the sheet, with long cytoplasmic bridges between syncytia where the cell nuclei are grouped in clumps. It is probable that virus infection of living tissues produces multinucleated cells in an analagous fashion by disrupting cell boundaries, agglomerating the cytoplasms of adjacent cells and concentrating more than one nucleus within the unit.

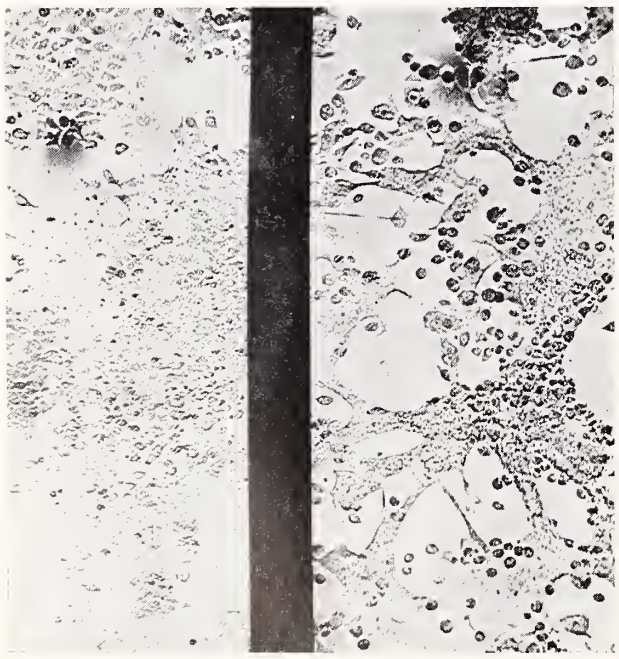


Figure 1

Details of virus replication and invasion of the cell sheet have been studied with both the light and electron microscopes, using several varieties of staining technics including fluorescent antibodies.[5-7] Within 10 hours after inoculation, the virus can be identified within the intact cells, proliferating at the periphery of the cytoplasm. The virus has not been identified within the nuclei, or in the small intranuclear inclusions that are observed in infected cells. Larger inclusions are formed in the cytoplasm as infection proceeds, and although these contain some viral antigen, it is believed that they are by-products of virus replication and distorted cell metabolism, rather than foci of virus concentration. After 24 to 36 hours, virus replication approaches its peak, and the cell membranes disappear as typical syncytia begin to form and virus is released into the medium.

The electron microscope discloses virus particles present both as round bodies and as long filaments. The round bodies show an internal core and a surrounding envelope, and thus it seems that they may be cross-sections of the longer filaments. Their diameters range from 60 to 70 millimicrons—somewhat less than had been estimated on the basis of other technics such as membrane filtration and ultracentrifugation. In any event, their size falls into the intermediate range, since the smallest viruses have diameters measuring around 18 mμ, and the larger ones slightly over 200. The significance of the filament is uncertain. The filaments may be chains or groups of individual units, since they have been observed to be 40 times as long as the cross-sectional diameter—i.e., 2.5 mμ, or one-third of the diameter of a red blood cell!

Classification of the RS virus is still under debate. In many respects it seems to belong in the group of myxoviruses that includes measles,

mumps, influenza, parainfluenza, Newcastle disease and the simian S-V 40 agent. However it fails to conform to that group in some important respects, such as its failure to infect the embryonated egg, and its lack of capacity to adsorb onto or agglutinate red cells of animal species such as the guinea pig and chicken.

Some of the other myxoviruses, notably measles and mumps, also produce syncytial changes in tissue culture. Although the morphologic changes in RS tissue cultures are distinctive and can be recognized by the experienced technician, it is desirable to have a more conclusive method of proving their specificity. This is achieved with the neutralization test in which aliquots of the virus preparation are mixed with specific RS antiserum and with indifferent serum, and inoculated upon identical media. If the tissue-culture changes appear in the control and not in the medium containing specific neutralizing serum, the identity of the virus is established. In a similar way, the concentration of specific neutralizing antibody can be measured in specimens of serum from children under study. The virus also contains antigen which is suitable for use in complement-fixation tests.

Until recently, it was thought that all strains of RS virus which had been isolated were of the same antigenic composition—a happy circumstance that would simplify the epidemiologic study. Unfortunately, two groups of investigators[8, 9] have now reported that strains of virus isolated from different human sources may produce neutralizing antibodies in animals which don't completely cross-react with each other. At the present time, it isn't certain that these strain differences that can be shown in laboratory animals are of any significance in human infections, for human convalescent serums react with equal strength against all strains thus far isolated.

EPIDEMIOLOGY IN MAN

The relation between the RS virus and human disease has been under study in several urban centers of this country since 1958. Groups in Washington, under the leadership of Chanock,[10, 11]

R. S. VIRUS NEUTRALIZING ANTIBODIES 1:2 OR GREATER BY AGE

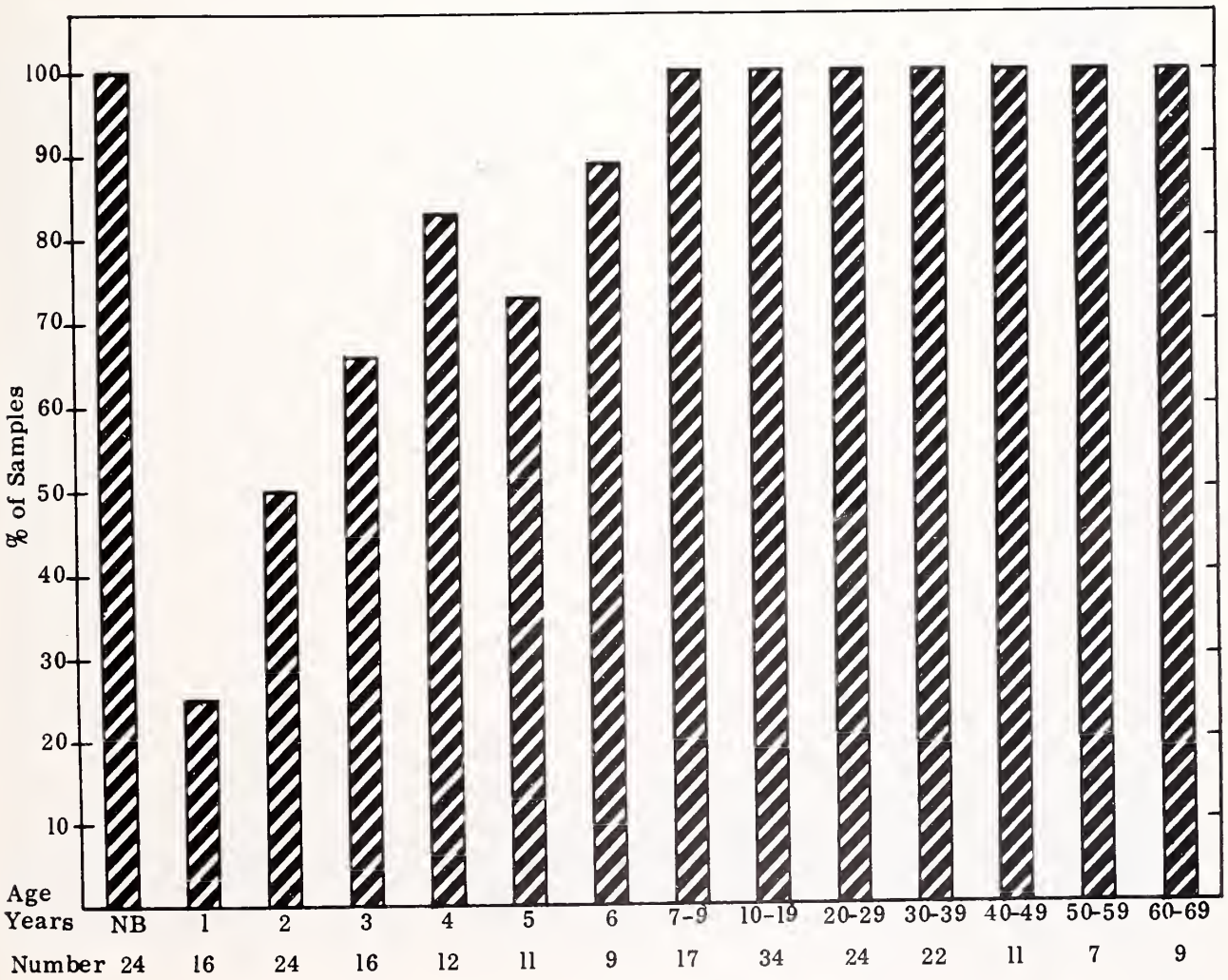


Figure 2

and in Philadelphia, under Hilleman and Stokes,[12] have approached the problem in much the same way as our group in Chicago.[4] For simplicity, I shall concentrate upon our own findings, making reference where necessary to the significantly discrepant observations of the other groups.

The general plan of study has been to survey large groups of children in pediatric wards, in outpatient departments, and in nursery-school and well-baby populations, seeking to isolate RS virus from children recently ill with respiratory infections and from controls of a similar type who have been free of respiratory symptoms. Simultaneously, blood specimens for measurement of neutralizing and complement-fixing antibody titres were obtained early during the illness, and again at the end of convalescence. The results can be presented as evidence bearing upon some of the obvious epidemiologic questions.

Is the RS virus a common pathogen? If one accepts the presence of specific neutralizing antibody in the serum as evidence of previous contact with the virus, it can be concluded that nearly everyone in our Northern urban populations encounters this agent before reaching school age. Figure 2 shows the percentages of individuals at various ages whose sera neutralized the virus in a dilution of 1:2 or greater. Without exception, all sera of individuals over seven years of age showed this capacity. Only during the period from one to three years was there any considerable fraction of the group studied who lacked antibody. Figure 3 shows the distribution of low, medium and high levels of antibody within the same data.

A trend toward increasing concentrations of antibody from early infancy to young adulthood is demonstrated. In both figures, the column depicting the titres of newborn infants is almost identical with that for the older teen-agers and young adults. The suspicion that this may represent antibody passively transferred from the mother to her baby across the placental circulation is confirmed by Figure 4, which shows an exact agreement of titres between mother's serum and newborn's cord blood in 70 per cent of the pairs, and a correspondence within one tube dilution in all but three of the remaining mother-baby pairs. Thus, it appears that RS virus is as ubiquitous as

R. S. VIRUS NEUTRALIZING ANTIBODIES BY AGE AND TITER

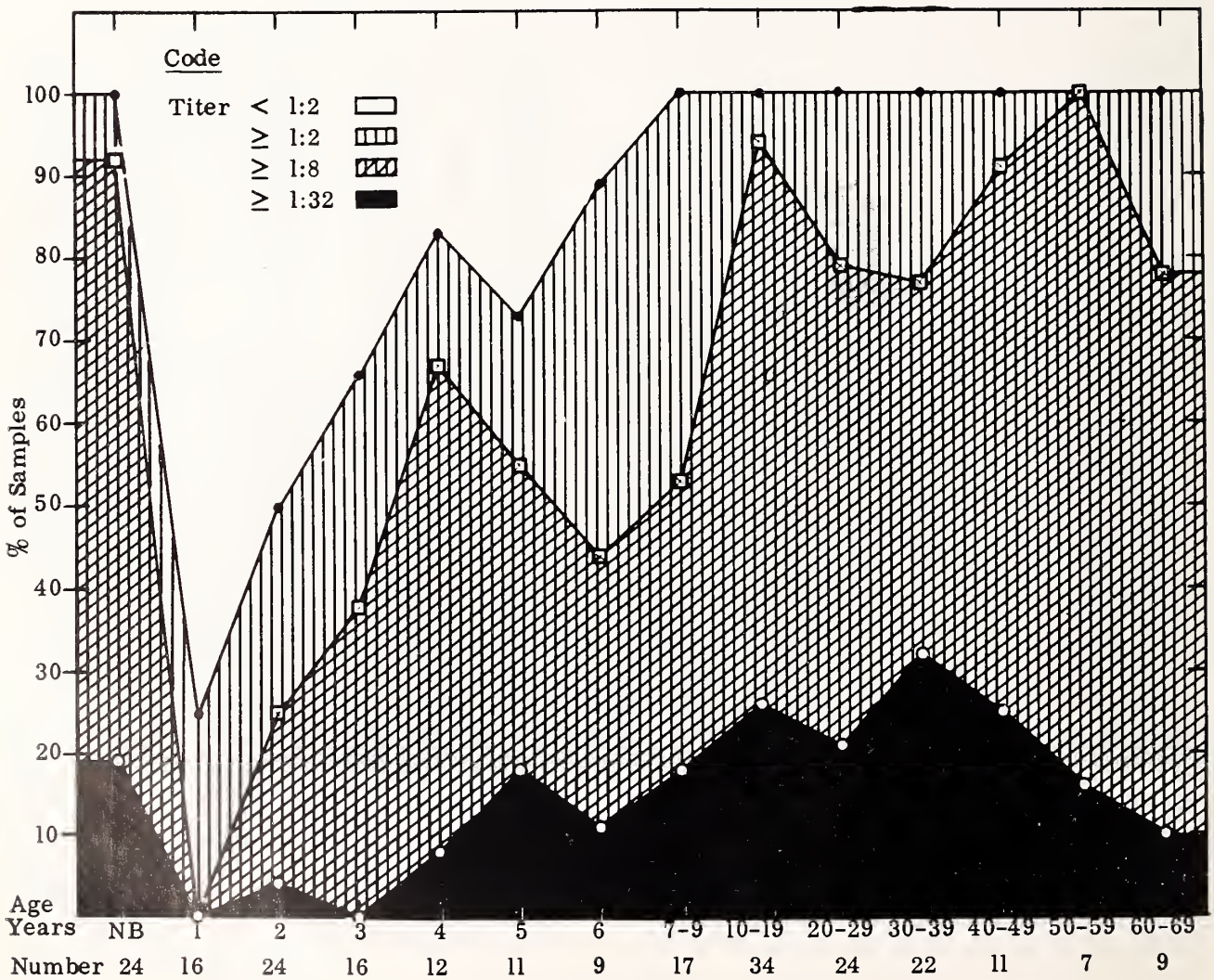


Figure 3

measles in our urban, North Temperate Zone populations, and that passive immunity is regularly transferred to the newborn, but disappears before the infant's first birthday. Serologic virginity is of brief duration, however. By the time children reach the first grade in school, all of them show evidence that they have had their first encounter with the virus. Whether or not this situation characterizes Southern cities or is true of rural areas in the North and South hasn't yet been determined, since studies have yet to be reported from such population groups.

When does the RS virus circulate in these communities? The recovery of virus from the childhood population turns out to be a seasonal event that recurs every year. Figure 5 shows that in Chicago the virus is absent during the greater portion of the year, appearing only during a rather sharply limited period in the winter or spring, lasting three to five months, and ending as abruptly as it began. The same phenomenon has been encountered in Washington and in Philadelphia. That it is related in some way to climate is attested by the fact that similar epidemic peaks have been reported from Melbourne, Australia,[13] occurring

TABLE I

RS VIRUS ISOLATIONS

Fall '58 thru Spring '62

Clinical Status of Patients	No. Sampled	No. R.S. Virus +
Well	559	4
Acute Resp. Illness	910	145

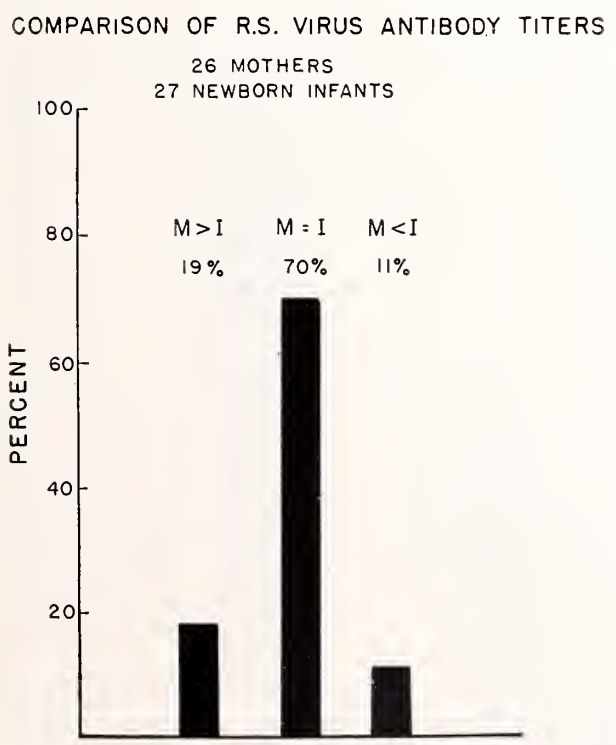


Figure 4

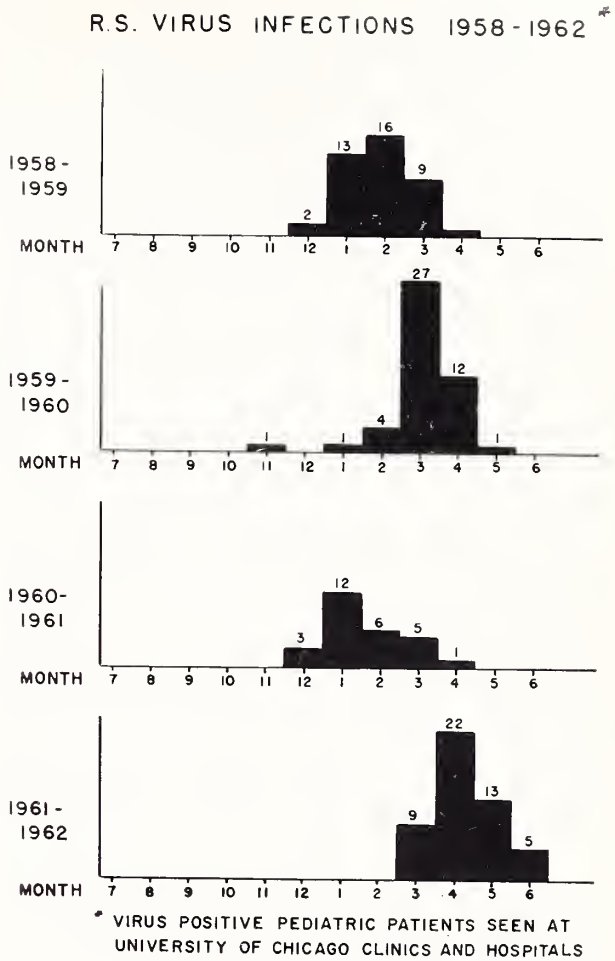


Figure 5

during June, July and August, the winter months in the Southern Hemisphere. In both the Northern and the Southern Temperate Zones, the peak period for RS virus infection appears to correspond with the peak of total respiratory illnesses among children.

Is the virus shed only by the sick, or does it circulate also among healthy carriers? The combined data from four seasonal epidemics shown in Table 1 indicate clearly that almost but not quite all of the virus is released by children who are ill with respiratory disease. About 15 per cent of all the sick children cultured during these seasons revealed RS virus in their secretions, and less than 1 per cent of their matched controls were found to harbor the agent. Even though small in number, the healthy carriers may constitute an important element in conveying the virus to children who are non-immune or only relatively so.

Does the virus afflict only those who lack humoral immunity? In a general way, there is an inverse correlation between the risk of infection and the presumed height of the antibody level. Evidence on this point is necessarily indirect, since serial antibody studies upon individuals prior to acquisition of infection are often unavailable. Figure 6 shows the frequency of RS virus recovery

among children of various ages who exhibited respiratory symptoms.

The importance of RS as a pathogen for the young is emphasized by its isolation from 36 per cent of the sick infants less than six months of age. The recovery rate then drops off to about 16 per cent for those between seven and 24 months; to 10 per cent for those between two and four years; and down to 3 or 4 per cent for older children. With the exception of the early months, when passively acquired antibody may still be found in the serum, the pattern of infection bears a general inverse correlation to the frequency and concentration of circulating antibody at different ages. However neither the passively acquired nor the actively fabricated antibodies can be taken as a guarantee of firm protection against the virus. Resistance must depend upon the operation of additional factors that cannot be defined numerically. The following data will provide support for this conclusion.

Table 2 shows the changes in antibody titre between acute and convalescent sera from individuals of various ages, each of whom suffered an illness from which virus was isolated. It demonstrates that the expected four-fold rises in antibody titre don't always follow specific infection. (Convalescent sera marked with a black dot are those which failed to show a four-fold increase.) Infants less than six months of age are particularly unreliable in this respect. This finding has also been observed by Chanock's group. In some instances, the acute serum level was actually higher than the convalescent, suggesting that it may have been passively-transmitted antibody that was being measured. The persistence of antibody passively transmitted from the mother is variable from one infant to another, but its disappearance is usually complete sometime between the ages of six weeks and six months.

TABLE 2

CHANGES IN COMPLEMENT-FIXING AND NEUTRALIZING ANTIBODY TITRES IN SERA OF CHILDREN WITH POSITIVE RS VIRUS ISOLATIONS DURING RESPIRATORY ILLNESS

Pt.	Age	C F Acute	C F Conv.	Neut. Acute	Neut. Conv.	Interval Between Specimens (Days)
2249	3 wks.	32 ●	16 ●	64	64 ●	12
2099	2 mos.	(8	16	8	32	26
2038	3 mos.	(8	(16 ●	8	8 ●	7
2093	3 mos.	(8	16	16	16 ●	23
2119	3 mos.	(8	16	64	16 ●	49
2317	4 mos.	(8	(16 ●	4	4	7
2188	4 mos.	(8	32	8	64	50
2088	4 mos.	(8	128	4	32	27
2035	5 mos.	(8	(8 ●	8	4 ●	7
2166	5 mos.	(8	64	(4	16	7
1996	5 mos.	(8	16	32	32 ●	18
2235	6 mos.	(8	64	(4	16	10
2268	7 mos.	)256	)512	8	128	12
2047	9 mos.	(8	128	4	256	15
2204	11 mos.	(8	128	4	16	21
2073	23 mos.	(8	16	(4	16	17
2256	2 yrs.	64	256	32	512	5
2098	2 yrs.	(8	256	(4	64	14
2197	2 yrs.	)256	)512	16	32 ●	23
2203	4 yrs.	(8	(8 ●	4	64	19
2289	4 yrs.	64	256	256	1024	15
1998	5 yrs.	(8	)256	32	)512	29
2196	35 yrs.	(8	16	4	8 ●	17

Table 3 assembles the initial antibody levels of virus-positive children of different ages. All specimens were obtained within less than three days after the onset of symptoms. Again, the failure of antibody (this time probably actively acquired) to protect against infection is demonstrated. Table 4 enumerates children who suffered significant virus-positive illness during one epidemic season without acquiring immunity sufficient to protect them from another virus-positive illness in a succeeding year. Even among adults, infection may take place in the presence of circulating antibody, as demonstrated by Chanock's group both in experimentally transmitted[14] and in naturally occurring reinfection.[15]

TABLE 3

RS-VIRUS NEUTRALIZING ANTIBODIES IN SERA OBTAINED BEFORE OR WITHIN 3 DAYS OF ONSET OF ILLNESS

Antibody Titre	<1:4	1:4	1:8	1:16	1:32	>1:32
No. of pts.	3	3	4	7	4	3

TABLE 4

MULTIPLE RS VIRUS INFECTIONS IN SAME PATIENTS

Name	Date	Age	Illness	Isol.	Serol.
Clardy	3/59	2 yrs.	Asthmatic bronch.	+	+
	3/60	3 yrs.	Asthmatic bronch.	+	N D
Blecke	2/59	4 mos.	Bronchiolitis	+	
	3/60	17 mos.	Pneumonia	+	
Jones	5/62	5 mos.	Bronchiolitis	+	
	2/63	15 mos.	Pneumonia	+	
Smith	3/60	10 mos.	Bronchiolitis	+	
	5/62	2½ yrs.	Pneumonia	+	
Li	3/60	2 yrs.	Asthmatic bronch.	–	+
	3/61	3 yrs.	Asthmatic bronch.	+	+

What are the clinical manifestations of RS virus infection? Unlike measles or herpangina, RS infection produces no pathognomonic signs. Its clinical behavior has only mildly distinguishing characteristics, and they can be delineated by two approaches. First, we can examine the role of the virus in the production of several clinical types of respiratory disease. Second, we can describe the symptoms and laboratory findings which appear in the affected child.

TABLE 5

ISOLATION OF RS VIRUS FROM CHILDREN WITH VARIOUS DIAGNOSES

Diagnosis	No. in Group	No. RS +	% RS +
Well	559	4	1
ARI	535	56	11
Croup	78	3	4
Bronchiolitis	98	55	56
Asthmatic bronchitis	78	5	6
Pneumonia	121	26	22

Table 5 assembles the total group of patients on whom etiologic studies were performed, and divides them into several clinical categories. As previously noted, there were a few ostensibly well individuals from whom the virus was recovered. ARI stands for "acute respiratory illness" marked by an abrupt change in the previous state of health, with signs and symptoms of inflammation of the upper respiratory passages, including nasal obstruction, discharge and cough. In 11 per cent of the children suffering from this common and non-specific type of illness, virus was recovered. Laryngeal involvement, with inspiratory stridor, croupy cough or extreme hoarseness, is included under the designation "croup." Such symptoms were infrequent among our virus-positive subjects. The group in Washington reports a somewhat higher incidence in their material—about 10 per cent as contrasted with our 4 per cent.

RS virus was isolated with greatest frequency from children, particularly infants and toddlers, who showed evidence of inflammation of the bronchi and lungs. Children suffering their first attacks of expiratory dyspnea, with musical or wheezing rales and obstructive emphysema, were classified as having bronchiolitis. Those who were having a repetition of such symptoms were placed in the category of asthmatic bronchitis, in order to set apart those individuals who react with bronchospasm to respiratory infection of whatever etiology. When physical signs or roentgenologic evidence of consolidation was encountered, the child was diagnosed as having pneumonia. RS virus was recovered from more than half of the patients with bronchitis; from about a quarter of those with pneumonia; and from only a small fraction of those designated as having asthmatic bronchitis. Although the criteria for clinical classification in the Washington and Philadelphia studies were somewhat different, the findings in those cities were in agreement with ours.

Table 6 lists the initial symptoms and the fre-

R. S. VIRUS ISOLATION RATE BY AGE

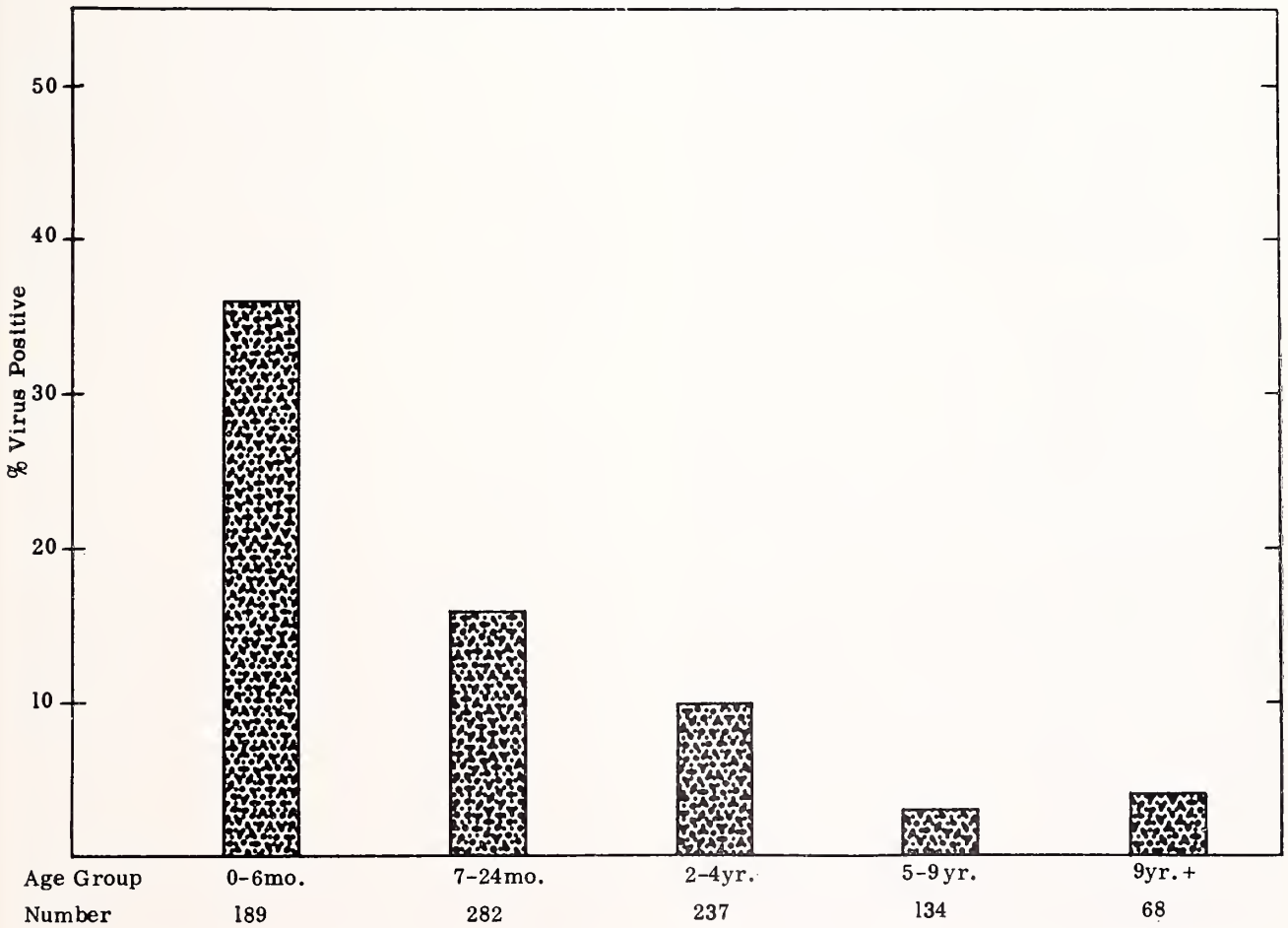


Figure 6

quencies of their occurrence in the children from whom virus was eventually isolated. There is nothing that provides a clue to etiology, but some of these and some of the other clinical aspects deserve comment. Cough, with or without nasal discharge, is the most consistent early symptom. Fever is notably absent during the early course of the illness, and often fails to appear at all, unless there is extensive involvement of the lower respiratory passages. Also notable for their infrequent occurrence are symptoms related to the ear, to the eye and to the gastrointestinal tract.

TABLE 6

INITIAL MANIFESTATION OF ILLNESS
130 RS VIRUS + PATIENTS

	No. Patients		No. Patients
Fever	4	Larynx	0
Eye	0	Cough	43
Ear	0	G.I.	6
Nose	32	Malaise	7
Throat	2	All Resp. Sx.	32

The laboratory findings are not typical of viral infections generally. Leukopenia is infrequent. If the leukocyte count is other than what one might normally expect, it is usually abnormal in the direction of an increase in polymorphonuclear elements. Lymphocytes with abnormal morphology are not found. The bacterial flora of the nose and throat disclose no association with pathogens different from those obtained from the well controls. In particular, there is no significant increase in the rate of recovery of Hemophilus influenzae. Chanock's group has also been unable to confirm the role of this agent in bronchiolitis that was reported by Sell.[16]

The duration of clinical illness is variable. Commonly, the symptoms clear within a few days to a week. Infants who suffer from bronchiolitis fortunately tend to have a resolution of the obstructive phase of the disease within 48 to 72 hours, although the physical signs of bronchitis may hang on for much longer periods. Occasionally an infant or young child will suffer a chronic, low-grade or remitting type of illness that lasts for several weeks and continues to yield RS virus.

Beyond the period of early childhood, the virus has been isolated chiefly in association with minor respiratory infections of college students[17] and Marine recruits.[15] It is also thought to play a role in triggering exacerbations of chronic bronchitis among adults who suffer from this disorder.[18]

What is the prognosis? Although infants suffering from bronchiolitis or pneumonia may be moderately ill during the obstructive phase of the disease, RS infection is a surprisingly infrequent cause of death. As a matter of fact, there are no published reports of autopsy findings. It should not be inferred that recovery always ensues when the etiology is RS, for we have just recently lost an infant during the acute stage of the disease. In the absence of definitive pathologic studies, the symptoms are thought to be due to extensive inflammation of the respiratory epithelium, with mechanical occlusion of bronchioles producing partial occlusion that leads to emphysema, or complete occlusion that results in areas of distal consolidation. Specific histologic features have not been described.

What can be done to speed recovery? In the absence of effective antiviral drugs, the management of RS virus infection is purely symptomatic. Infections limited to the upper passageways require no treatment at all. The management of obstructive emphysema includes humidification of the inspired air, in order to keep secretions liquid and hence mobile in response to coughing; the administration of oxygen when cyanosis is present; and the administration of steroids in full dosage when the obstruction is severe. Bronchodilating drugs give no consistent relief. The steroids presumably decrease the inflammatory reaction that is constricting the bronchiole lumina. Since their effect is often delayed for several hours, it is prudent to administer large doses initially, if it has been decided that such treatment is necessary. In most instances, the child passes the crisis within two or three days, and therapy can be withdrawn without subjecting him to the risk of prolonged administration of these compounds.

What is the relative importance of RS in the spectrum of respiratory virus infections in children? An answer to this question on the basis of current knowledge will admittedly not be a final one, for each year there are advances in laboratory technics that result in the addition of new agents to the group under study. Apart from measles, mumps and the enteroviruses, our laboratory, during the past three seasons, has isolated viruses from sick chlidren in the following order of frequency

RS	104
Adenovirus	24
Para-influenza 3	22
Influenza B	15
Para-influenza 2	14
Para-influenza 1	13

Thus, the RS isolations constitute well over half of the total, and they occur more than four times more frequently than any other strain. Furthermore, RS was the only viral agent with frequent relation to clinical disease of the lower respiratory tract. This personal experience conforms well with the estimates of relative frequencies made from other data.[19] For these reasons, RS has been selected by the principal investigators in the field as the primary target for the development of a vaccine against respiratory-virus infection. From the information presented previously, it can be anticipated that practical difficulties will be encountered. Because of the vulnerability of very

young infants to RS infection, it will be imperative to attempt immunization soon after birth, but infancy is also the period in which antigenic response is erratic and the protection afforded by humoral antibody is admittedly weak. It will be necessary to develop a vaccine of sufficient antigenic potency to rouse the sluggish defenses of these small infants, if protection is to be afforded them during their age of maximum susceptibility.

SYNTHESIS AND SUMMARY

The significance of the data presented can be summarized by tracing the relation between the developing child and the RS virus which he must eventually harbor, if he resides in one of our Northern cities. At birth, he is endowed by his mother with a supply of antibody, both neutralizing and complement-fixing, in a titre equivalent to her own. In this respect the antibody behaves like a member of the 7S gamma-1-globulin group. The half-life of these substances in the infant's circulation is estimated at about six weeks. Neither the passive antibodies, nor the infant's capacity to fabricate new antibodies, nor his tissue defenses provide him with an effective shield against the virus. Each year, during the winter and spring months, he runs the hazard of contact with RS virus, for it circulates freely in the community during a four-month epidemic period in those times of year. If he is fortunately isolated, he may escape contact for one or more epidemic seasons, and his blood will show a corresponding absence of specific antibody.

When primary exposure to the virus occurs, he may have only a serologic response, he may suffer from a relatively mild upper-respiratory infection, or he may have the more severe variety of illness, with inflammation of the lower respiratory passages. The younger he is at the time of primary infection, the more likely he is to have manifest illness, and if this exposure occurs before the age of three years, he runs a significant risk of having bronchiolitis or pneumonia. In any event, he is sure to have some form of primary infection before he leaves the first grade.

The appearance of specific antibody in his blood stream following the primary infection, even if it has been a severe one, doesn't necessarily protect the child from a recurrence in a subsequent season. It seems that a repetition of contact with the virus during each epidemic season gradually elevates his resistance, however, so that after reaching school age he is much less likely to show symptoms of infection, and when he does, the disease will be mild. On a few occasions, he may be found to be an asymptomatic shedder of virus. During later life, he continues to carry serologic evidence of protection, but under certain circumstances may suffer mild infections from which virus can be isolated.

As is the case with measles, mystery surrounds the question of what happens to the RS virus during inter-epidemic periods when it cannot be found in the population. Does it actually circulate at such a low or transient level that the immune carriers cannot be readily detected? Or do all previously infected individuals continue to harbor virus in a sequestered, localized infection that sheds recoverable virus only under conditions of stress? Still unanswered is the question of the geographic and climatologic distribution of the agent. Does the epidemiologic situation in temperate-zone cities pertain to rural areas, or to areas of warmer or more even temperature? The answers to these and other fundamental questions about this common pathogen of man will doubtless emerge as further information is accumulated and analyzed by the several longitudinal studies now in progress.

REFERENCES

1. Morris, J. A., Blount, R. E., Jr., and Savage, R. E.: Recovery of cytopathogenic agent from chimpanzees with coryza. Proc. Soc. Exper. Biol. & Med., **92**:544-549, (Jul.) 1956.
2. Chanock, R., Roizman, B., and Myers, R.: Recovery from infants with respiratory illness of virus related to chimpanzee coryza agent (CCA). I. Isolation, properties and characterization. Amer. J. Hygiene, **66**:281-290, (Nov.) 1957.
3. Coates, H. V., and Chanock, R. M.: Experimental infection with respiratory syncytial virus in several species of animals. Amer. J. Hygiene, **76**:302-312, (Nov.) 1962.
4. Beem, M., Wright, F. H., Hamre, D., Egerer, R., and Oehme, M.: Association of chimpanzee coryza agent with acute respiratory disease in children. New England J. Med., **263**:523-530, (Sept. 15) 1960.
5. Bennett, C. R., Jr., and Hamre, D.: Growth and serological characteristics of respiratory syncytial virus. J. Infect. Dis., **110**:8-16, (Jan.-Feb.) 1962.
6. Kisch, A. L., Johnson, K. M., and Chanock, R. M.: Immunofluorescence with respiratory syncytial virus. Virology, **16**:177-189, (Feb.) 1962.
7. Armstrong, J. A., Pereira, H. G., and Valentine, R. C.: Morphology and development of respiratory syncytial virus in cell cultures. Nature, **196**:1179-1181, (Dec. 22) 1962.
8. Coates, H. V., Kendrick, L., and Chanock, R. M.: Antigenic differences between two strains of respiratory syncytial virus. Proc. Soc. Exp. Biol. & Med., **112**:958-964, (Apr.) 1963.
9. Wulff, H., Kidd, P., and Wenner, H. A.: Respiratory syncytial virus: observations on antigenic heterogeneity. Proc. Soc. Exp. Biol. & Med., **115**:240-243, (Jan.) 1964.
10. Chanock, R. M., Kim, H. W., Vargosko, A. J., Deleva, A., Johnson, K. M., Cumming, C., and Parrott, R. H.: Respiratory syncytial virus. I. Virus recovery. J.A.M.A., **176**:647-653, (May 27) 1961.
11. Parrott, R. H., Vargosko, A. J., Kim, H. W., Cumming, C., Turner, H., Huebner, R. J., and Chanock, R. M.: Respiratory syncytial virus. II. Serologic studies. J.A.M.A., **176**:653-657, (May 27) 1961.
12. McClelland, L., Hilleman, M. R., Hamparian, V. V., Ketler, A., Reilly, C. M., Cornfeld, D., and Stokes, J., Jr.: Studies of acute respiratory illnesses caused by respiratory syncytial virus. 2. Epidemiology and assessment of importance. New England J. Med., **264**:1169-1175, (June 8) 1961.
13. Forbes, J. A., Bennett, N. M., and Gray, N. J.: Epidemic bronchiolitis caused by respiratory syncytial virus: clinical aspects. Med. J. Australia, **48**:933-935, (Dec. 9) 1961.
14. Johnson, K. M., Chanock, R. M., Rifkind, D., Kravetz, H. M., and Knight, V.: Respiratory syncytial virus. IV. Correlation of virus shedding, serologic response and illness in adult volunteers. J.A.M.A., **176**:663-667, (May 27) 1961.
15. Johnson, K. M., Bloom, H. H., Mufson, M. A., and Chanock, R. M.: Natural reinfection of adults by respiratory syncytial virus. New England J. Med., **267**:68-72, (Jul. 12) 1962.
16. Sell, S. H.: Some observations on acute bronchiolitis in infants. A.M.A. J. Dis. Child., **100**:7-15, (Jul.) 1960.
17. Hamre, D., and Procknow, J. J.: Viruses isolated from natural common colds in the U.S.A. Brit. Med. J., **2**:1382-1385, (Nov. 25) 1961.
18. Sommerville, R. G.: Respiratory syncytial virus in acute exacerbations of chronic bronchitis. Lancet, **2**:1247-1248, (Dec. 14) 1963.
19. Hilleman, M. R.: Respiratory syncytial virus. Amer. Rev. Resp. Dis., **88**:Suppl.181-189, (Sept.) 1963.

Management of Pain in Anorectal Surgery

A Review of 1,000 Patients

RALPH H. RIEGELMAN, M.D.
Des Moines

Much has been written about the fact that patients with anorectal disorders come to their physicians for help primarily because of pain or rectal bleeding.[1-3] Regardless of age or sex, the one thing that all of these patients have in common is pain or a fear of the pain that they expect to experience following surgery. Comparatively little has been written, however, about methods and procedures for the control of anorectal pain.

The report that follows describes a total approach to the management of anorectal pain. It is derived from a retrospective review of the author's experience in the surgical treatment of 1,000 patients with anorectal disorders. In each patient, a thoroughly planned program for total management of pain was used. The program described begins with the initial examination, continues through the postoperative period, and ends only after the patient's wounds have healed.

PREOPERATIVE AND POSTOPERATIVE PAIN

Pain, when encountered upon initial examination of the anorectal patient, can be both an aid and a hindrance to careful diagnosis. On the one hand, differentiation between various types of pain is helpful in diagnosis. On the other hand, physical examination of the anorectal area obviously is difficult when a patient has a painful anal lesion, or when a patient with a chronic condition has had a previous unpleasant experience with proctoscopy. Careful digital and endoscopic procedures should not be omitted in such cases. If necessary, the patient should be hospitalized and examined under regional anesthesia.

In considering control of postoperative pain, the physician must differentiate between the muscle spasm that results in severe pain immediately following surgery, and the less severe local tissue irritation and discomfort that commence several hours later. The trauma of the surgical procedure results in spasms of the sphincters and the muscles adjacent to the perirectal-pelvirectal area. This pain, which is most severe during the first 24 hours, can be controlled by narcotics.

The second type of pain or discomfort is generally most noticeable *after* the first 24 hours. It may continue for weeks. Patients may describe this type as irritation, burning and a severe sense of soreness. Since failure to control this discomfort makes the patient's recovery more difficult, a topical anesthetic agent is indicated during those difficult few weeks. In selecting a topical anesthetic, one should take care that the therapeutic agent is effective but is most unlikely to cause an adverse skin reaction, thus adding to the problem it was intended to solve.

CLINICAL PROCEDURE TO MINIMIZE PAIN

The case reports of 1,000 patients who underwent surgery for various anorectal conditions were surveyed. Table 1 shows the distribution of conditions treated.

These patients (572 males and 428 females) ranged in age from 15 months to 83 years. Of the 1,000 patients, 50 (5.0 per cent) were 65 years of age or older; 848 (84.8 per cent) were 30 to 64 years old; and 102 (10.2 per cent) were under 30 years of age. The average length of hospitalization was 6.9 days. Nine patients were hospitalized less than five days, and 16 were hospitalized 14 days or longer.

The program of pain management began at the

TABLE 1

DISTRIBUTION OF CONDITIONS TREATED IN 1,000 PATIENTS

Diagnosis	Number of Patients
Hemorrhoids and fissures	339
Hemorrhoids	247
Hemorrhoids, fistula and perirectal abscess	66
Hemorrhoids and rectal prolapse	64
Hemorrhoids, fissure and rectal stricture	52
Fistula and perirectal abscess	33
Hemorrhoids and fistula	30
Hemorrhoids, fistula and fissure	18
Hemorrhoids, fistula, fissure and perirectal abscess	15
Other anorectal conditions	136
	1,000

first examination. Patients were assured that every effort would be made to hold postoperative pain to a minimum. Gentle digital examination preceded endoscopy, and ample lubrication was used for both procedures. Following examination, a topical anesthetic ointment, Diothane® (Merrell), was applied to the intra- and perianal surfaces.

For the operative procedure, the anesthesia of choice for most conditions was saddle-block or caudal. This type affords proper relaxation and minimizes trauma to the tissues. The clamp-and-dissection operative procedure was used. Suture material was kept to a minimum. No packing was used at the conclusion of surgery. A small rubber tube was inserted in the anorectal canal; Gelfoam® (Upjohn) strips were placed on the anal verge; Telfa® (Bauer & Black) strips were applied to the tissues; and a pressure bandage was applied.

DISCUSSION

When these patients appeared for initial examination, almost all of them were in pain, and they were generally fearful of the pain and discomfort that they would experience following surgery. Most of them were obviously reassured when told that everything possible would be done to minimize the pain. Despite the well-known difficulty of examining patients with anal lesions, it was usually possible to conduct both digital and endoscopic examinations during the patient's first visit. The author attributes this success to a systematic application of the pain-management concept, including such factors as gentle manipulation, ample lubrication and reassurance.

The severe spasm and pain resulting from surgical trauma were not significant problems in these 1,000 patients. The technic of administering narcotics within two hours after surgery proved effective. Usually narcotics could be discontinued during the second 24 hours.

For local pain and discomfort later in the postoperative period, Diothane Ointment was used in all 1,000 patients. Diothane was selected initially because it contains an effective topical anesthestic agent that is not one of the "caine" compounds. That agent, diperodon, is chemically different from local anesthetic compounds of the benzoate ester type, for it does not contain a benzoyl structure.

Thus, theoretically, Diothane Ointment should help provide comfort to the patient, yet minimize the incidence of side effects—an important consideration in the pain-management concept. This retrospective survey bore out our initial clinical impressions of Diothane Ointment. It made the dressing more comfortable to wear during ambulation, and helped relieve the irritation that patients experience following bowel movements.

In total, Diothane Ointment was acceptable to 97.4 per cent of the patients in this series. Five patients refused the medication because of their resistance to ointments in general. The ointment was discontinued in 21 patients because of skin reactions. Thus, 974 patients used the ointment routinely throughout the postoperative period (usually three to four weeks). The typical response of these patients was that they "felt more comfortable" using the preparation.

SKIN REACTIONS

Since the anesthetic agent in Diothane Ointment is not of the "caine" type, we were especially interested in recording the incidence of skin reactions that occurred in this series of 1,000 patients. Physicians have reported a high incidence of skin reactions to some of the other local-anesthetic preparations. A report to the Council on Pharmacy and Chemistry of the American Medical Association suggested that the incidence of sensitivity to local anesthetics might range from 2 to 40 per cent.[4]

In this series, 21 patients (2.1 per cent) experienced skin reactions. Some of these occurred soon after the application of Diothane, and others were delayed. Onsets of skin reactions in the 21 patients are shown in Table 2. No general or systemic side effects were encountered. On examination, these 21 patients were found to have a skin rash, redness and some swelling extending out from the operative area. In 12 patients this condition first appeared within the first 24 hours. In nine others, however, it did not occur until between the tenth and fourteenth postoperative days. In each instance, Diothane Ointment was immediately discontinued, and a bland ointment or cream with no anesthetic ingredient was applied. Also, antihistamine or cortisone by mouth was initiated. Generally, the reaction subsided within 24 to 48 hours.

TABLE 2

INCIDENCE AND ONSET OR SKIN REACTIONS

Onset of Skin Reactions	Incidence No. Patients	Incidence Per Cent
Immediate (within 24 hours)	12	1.2
Delayed (10th to 14th day)	9	.9
	21	2.1

CONCLUSIONS

1. One must conclude that no one medication or procedure can control all of the pain experienced by patients with anorectal disorders. A total program for pain management is necessary.

2. During the early examinations, pain and fear of pain can be minimized by such methods as gentle manipulative technic, ample lubrication of examining instruments, use of a topical anesthetic agent, and reassurance.

3. Narcotics are indicated to relieve the severe pain associated with surgical trauma. Usually they can be discontinued between 24 and 48 hours following surgery.

4. For local pain and discomfort after the immediate postoperative period, Diothane Ointment provides effective relief and is well accepted by patients. This preparation has minimal side effects, as compared with local anesthetics of the "caine" type.

5. In the author's experience, patients so treated are most grateful and pleased with their condition as they improve.

REFERENCES

1. Pruitt, M. C.: Hemorrhoids. St. Louis, C. V. Mosby Co., 1938, p. 53.
2. Nesselrod, J. P.: Clinical Proctology, 3rd Ed. Philadelphia, W. B. Saunders Co., 1964, p. 28.
3. Ford, C. E. and Prigot, A.: Efficacy of Anugesic® in anorectal disorders. Amer. J. Proctol. 14:319-326, (Oct.) 1963.
4. Gaul, L. E.: Overtreatment dermatitis; report to Council on Pharmacy and Chemistry. J.A.M.A. 157:720-725, (Feb. 26) 1955.

Transfusion Hemosiderosis

Report of a Case Treated With Desferrioxamine-B

D. T. KAUNG, M.D.
Iowa City

THE DEVELOPMENT OF IRON overload in patients with inadequate or ineffective erythropoiesis requiring multiple transfusions over long periods of time presents a therapeutic dilemma. Different iron chelating agents to reduce the excessive iron stores were tried without success. Then, in 1961, a new iron chelating agent, desferrioxamine-B, was reported by several European investigators[1] as safe and effective in the treatment of hemochromatosis. These reports were followed by several symposia and publications confirming the efficacy of desferrioxamine-B in the removal of iron from the body in both chronic and acute cases of iron overload.[2-9] However, detailed information remains scanty regarding the net iron balance in cases where blood transfusions have had to be continued for the primary disorder.

This is a report on a patient with chronic refractory anemia who developed transfusion hemosiderosis and was treated with desferrioxamine-B over a period of eight months, with some clinical improvement in spite of a continued need for blood transfusions.

CASE REPORT

The patient first became anemic in 1951, when he was a 23-year-old serviceman stationed in Korea. His hemoglobin fell to 3 Gm. per cent, but his leukocyte and platelet counts were normal. Further investigations in military hospitals characterized the anemia as normocytic and normochromic. A bone marrow aspiration was interpreted as normal. Therapeutic trials with ACTH and vitamin B_{12} were ineffective. Over a period of seven months, the patient received about 35 blood transfusions.

After he returned to civilian life, his anemia apparently underwent a spontaneous remission that lasted for seven years. During that period, he performed moderately heavy labor in a storm-and-sash factory. He had no medical follow-up, and required no transfusions. In the fall of 1958, however, he again noticed easy fatigability and shortness of breath on exertion. Examination in a local hospital showed severe anemia. The patient had been living alone, but apparently had been eating an adequate and varied diet. There was no history of exposure to noxious agents. His family history was negative. His intake of alcohol consisted of an occasional beer.

The patient was first seen at the Veterans Administration Hospital, Iowa City, in October, 1958. He appeared to be well developed and well nourished. Physical examination was negative, except for pallor of the skin and a soft blowing systolic murmur, best heard at the cardiac apex. On admission, a VDRL test and a urinalysis were negative. Several stools were slightly positive for occult blood, and negative for ova and parasites. The blood hemoglobin was 4.9 Gm. per cent, and the hematocrit was 15.5 per cent. The white blood cell count, differential and platelet counts were normal. The reticulocyte count was 0.1 per cent. Red cells in the peripheral blood smear showed anisocytosis, macrocytosis and a few target cells. A bone marrow aspiration showed a hypercellular marrow, with myeloid and erythroid hyperplasia

Dr. Kaung is a staff physician on the Medical Service at the Veterans Administration Hospital in Iowa City, and a clinical assistant professor of internal medicine at the U. of I. College of Medicine.

and a shift to the left in the erythroid elements (Table 1). Orthochromic normoblasts were decreased, and there was poor hemoglobin formation. The iron content of the marrow was slightly increased. Radioisotopic studies with Fe^{59} showed only 9 per cent incorporation in the red cells in 11 days (normal, 75-85 per cent). Red-cell survival using Cr^{51} tag was 80 days (normal, 108-120 days). The serum iron was 190 micrograms per cent, and unsaturated binding capacity was less than 50 micrograms per cent. Hemoglobin electrophoresis showed 100 per cent hemoglobin A. A Schilling test was normal.

The patient was treated with the following drugs in succession, without response: Pyridoxine, 200 mg./day, intramuscularly; prednisone, 60-120 mg./day; folic acid, 15 mg./day; $CoCl_2$, 100 mg./day; and fluoxymesterone (Halotestin), 30 mg./day. After the initial period of study, the patient's hemoglobin was maintained at 5.0 Gm. by means of two blood transfusions every six weeks.

Development of Transfusion Hemosiderosis. The course of the patient's disease is outlined in Table 2. In 1962, skin pigmentation definitely increased, and there were early signs of hepatomegaly and abnormal liver function. The changes were progressive. By the fall of 1963, definite hepatosplenomegaly and markedly abnormal liver function were apparent. The serum iron had risen to 388 mg. per cent. Meanwhile the patient's transfusion requirement increased from one unit every three weeks to five or six units per month. A liver biopsy in July, 1963, showed excessive iron deposits in the Kupffer's cells, liver parenchyma and portal spaces. There was only a slight increase of fibrous tissue in the portal spaces, and no evidence of cirrhosis. A bone marrow specimen at that time also showed increased iron storage, and many sideroblasts and siderocytes.

TABLE I

BONE MARROW ASPIRATIONS

Date	10-30-58	2-13-61	5-22-62	7- 3-63	7-23-64
Cellularity*	2+	2+	1+	N	2+
Megakaryocytes	N	N	N	N	N
Fe storage*	2+	2+	2+	3+	3+
Differential Counts	%	%	%	%	%
Myeloblasts	2.3	2.7	3.8	1.7	1.5
Promyelocytes	1.0	6.0	8.8	2.0	3.3
Myelocytes	19.0	15.7	10.0	22.0	20.5
Metamyelocytes	10.7	7.3	18.8	11.0	9.3
Bands	15.0	21.0	26.1	23.3	17.7
Polymorphonuclear neutrophils	33.6	32.0	22.5	30.3	37.7
Lymphocytes	11.0	11.3	5.0	2.7	1.8
Plasma cells	1.4	0.3	0.0	0.3	0.3
Eosinophils	4.3	2.3	2.1	5.0	4.7
Basophils	0.0	0.7	0.4	1.0	0.3
Monocytes	1.7	0.7	2.5	0.7	0.0
Histiocytes	—	—	—	—	2.9
Nucleated Rbc/100Wbc	24.0	38.0	25.0	23.0	67.7
Proerythroblasts / Basophilic erythroblasts	44.0	47.0	24.0	22.0	47.0
Polychromatic normoblasts	30.0	30.0	37.0	26.0	23.0
Orthochromatic normoblasts	26.0	23.0	39.0	52.0	30.0

*Graded Normal to 4+

Treatment with Desferrioxamine-B. Because of the progressive deterioration of the patient's clinical status due to excessive iron storage, desferrioxamine methanesulfonate (Desferal, Ciba) was started in a dose of 1.0 Gm./day, intramuscularly, on November 6, 1963. Daily 24-hour urine specimens were collected, and a total iron was determined by the method of Bothwell and Mallett.[10] This treatment was continued for eight months, until July 5, 1964, with only short interruptions during New Year and Easter vacations. The intramuscular injections were well tolerated until April, 1964, when the patient noticed slightly painful indurations at the sites of injection, and they persisted for several days. Further injections were given subcutaneously and were well tolerated.

During the course of therapy, there was gradual but definite clinical and laboratory evidence of improvement (Table 2). The patient had an increased sense of well-being. His skin pigmentation was definitely reduced. In July, 1964, his spleen was barely palpable, and his liver had definitely decreased in size. Except for a persistently abnormal cephalin flocculation test, the liver function tests returned to normal. The serum iron was also reduced. His transfusion requirement dropped once again to the steady level of two units every six weeks. Calculated on the basis of the iron gained from blood transfusions* and iron lost in the urine, the patient had a negative iron balance amounting to approximately 1.0 Gm. His daily iron output in the urine averaged 20-30 mg./day during the early months of treatment, and 15-20 mg./day during the later months. However, liver and bone-marrow biopsies in July, 1964, showed no discernable decrease of storage iron.

Four attempts were made to determine iron absorption from the gastrointestinal tract, both with and without parenteral desferrioxamine. The dose of Fe^{59} was 0.5 mc. on each occasion, with 10 mg. of ferrous sulfate as the carrier. Excretion of iron in the stools, measured over a period of 14 days, varied from 11.5 to 100 per cent of the administered dose.

The desferrioxamine treatment was terminated in July, 1964, following marked swelling, redness and wheal formation at the sites of injection on

* Estimated at 250 mg./unit of blood.

TABLE 2

PATIENT'S CLINICAL COURSE BEFORE AND AFTER DESFERRIOXAMINE-B THERAPY
(Desferrioxamine-B was started on Nov. 6, 1963)

	1958	1959	1960	1961	1962	1963												1964						
						Ja	F	Mr	Ap	My	Jn	Jl	Ag	S	O	N	D	Ja	F	Mr	Ap	My	Jn	Jl
Pigmentation		1+	1+	2+	2+	3+							3+					2+				1+		1+
Liver (centimeters from costal margin)		0	0	0	3								9		11.4			11.4	6.9	7.5		7.5		6.5
Spleen (centimeters from costal margin)		0	0	0	0								3		6.1			1.5	1.0	1.0		1.0		1.0
Bromsulfalein (per cent)	2			4.5	6.0		15					39			25				8					4
Cephalin flocculation					1+		1+					4+			4+			4+		3+		3+		3+
Albumin/Globulin ratio				4.6 / 2.0			4.0 / 3.1					2.8 / 4.7			2.9 / 4.8	3.3 / 4.2	4.3 / 3.9	3.9 / 4.4	3.8 / 3.1	3.9 / 3.6		3.9 / 3.1		3.5 / 3.1
Serum glutamic oxaloacetic transaminase				18											177	65	28	44		28				
Iron (micrograms per cent)	190	72		228	176 312					380	308	314	388		190	346		340	276	215		222		220
Iron combining capacity (unsaturated microgram per cent)	50			<50	125 <50					<50	<50	<50	<50		<50	<50		<50	<50	<50		<50		<50
Glucose tolerance	N														N									
Iron gain from transfusion (grams)	8 1.25	8.5	4.5	4.5	4.5	0.0	0.5	0.5	1.25	1.25	1.0	1.5	1.25	1.0	1.0	0.5	0.75	0.25	0.5	0.25	0.5	0.25	0.5	0.25
Iron loss from treatment (grams)																0.63	0.75	0.63	0.54	0.41	0.43	0.43	0.45	

two successive occasions. Further intradermal tests confirmed the dose-related allergic skin reaction. This response was not inhibited by the prior administration of an antihistamine drug. A precipitin test and a passive transfer test in rabbits were negative.

DISCUSSION

This patient's primary disease falls into the category of refractory anemia with hyperplastic bone marrow.[11, 12] A further designation of sideroachrestic or sideroblastic anemia cannot be applied with certainty, because the patient had received numerous blood transfusions before the start of the present study. The hyperplastic bone marrow, the increased early red-cell precursors, iron stores, sideroblasts and siderocytes, and the evidence of ineffective erythropoiesis—all of these are compatible with the diagnosis of sideroachrestic anemia.[13, 14] During the first 4½ years of treatment in this hospital, the patient's transfusion requirement remained constant at two units every six weeks. Red-cell masses, determined by Cr^{51} tag in 1958 and 1961, were 833 ml. and 707 ml., respectively. Corresponding red-cell survival times were 80 days. Since approximately 1,000 ml. of red blood cells were given by transfusion in 84 days, the patient's own contribution to his red-cell mass must have been minimal.

The first sign of iron overload was the increasing pigmentation of the patient's skin, especially over the exposed parts. Early functional derangements of the liver were detectable in the winter of 1962-1963. By then, the patient had received approximately 130 transfusions, totaling more than 30 Gm. of iron. In the summer of 1963, his transfusion requirement increased to five to six units per month. Even though no red-cell survival studies were done at that time, a shortened survival can be assumed. This hemolytic process was promptly reversed during the desferrioxamine treatment. Although definite hepatosplenomegaly and abnormal liver functions were present, no hepatitis or cirrhosis was found in the liver biopsies. Glucose-tolerance tests were also normal. Therefore, the case is better classified as hemosiderosis than as hemochromatosis. The exact differentiation between the two conditions, as well as the role of iron in the pathogenesis of these diseases, is still controversial. These subjects are extensively reviewed and discussed in several recent monographs.[15–18]

The patient's clinical and laboratory response to desferrioxamine therapy was gratifying. In the absence of any evidence of complicating disease such as hepatitis, it must be presumed that the worsening of the patient's course was related to the iron overload. The subsequent improvement with desferrioxamine therapy is difficult to explain on the basis of iron removal alone. Although approximately 4.5 Gm. of iron was removed in the urine over a period of eight months, the patient also gained approximately 3.5 Gm. from his transfusions. It is hard to understand how the removal of about 1.0 Gm. of iron from a total pool of approximately 50 Gm. in the body could account for the improvement.

A review of the literature revealed many cases of transfusion hemosiderosis which apparently benefited from treatment with desferrioxamine. However, data regarding total iron balance have been scanty. The patient reported by Moeschlin had a positive iron balance of 500 mg. during the one-month period of treatment.[6, 7, 9] Since the pharmacologic action of desferrioxamine is still incompletely understood, there is a possibility that it may exert other therapeutic effects in addition to iron chelation. Heilmeyer[7] noted that desferrioxamine influenced porphyrin metabolism. Wöhler[5] suggested that the rapid subjective improvement and the decrease of skin pigmentation may be due to a beneficial effect on oxidative metabolic processes.

This patient's transfusion requirement during desferrioxamine treatment was reduced but not eliminated. In the presence of this continued source of iron overload, prolonged periods of treatment will be necessary to deplete the excessive iron store. It would seem, therefore, that desferrioxamine will be most valuable in the prevention of iron overload in patients with refractory anemia who continue to require blood transfusions.

Desferrioxamine is usually well tolerated, and there are few side effects. Local allergic reactions were reported in three volunteers receiving the drug for the first time.[19] The reaction consisted of immediate edema and erythema at the site of subcutaneous injection, in one patient, and wheals and pseudopodia in all three patients following intracutaneous injections. In another case reported, the patient showed positive intradermal reactions, but tolerated intravenous, intramuscular and subcutaneous injections quite well.[9] The reaction following subcutaneous injection in the patient reported in this paper was similar to the reaction in the one previously reported. It differed from the previous cases in that the allergic reaction developed only after eight months of continuous therapy. The exact mechanism of the reaction is not apparent at the present time.

SUMMARY

A 35-year-old white male patient with chronic refractory anemia developed increased pigmentation of the skin, hepatosplenomegaly, abnormal liver function and increased transfusion requirements after more than 100 blood transfusions. These abnormalities decreased during treatment with desferrioxamine-B, over a period of eight months. There was a net loss of iron from the body, even though blood transfusions had to be continued. The treatment had no apparent effect on the primary disorder of chronic refractory anemia.

ACKNOWLEDGEMENTS

The radioisotopic studies were performed by Dr. Robert Cech, of the Radioisotope Service at Veterans Administration Hospital, Iowa City. Miss Judy Nemec, M.T. (ASCP), provided technical assistance in the determination of iron-excretion in the urine. Desferrioxamine-B (Desferal) was supplied by the Ciba Pharmaceutical Company, Summit, New Jersey.

REFERENCES

1. Imhoff, P.: Experience to date with desferrioxamine in the treatment of diseases involving a pathological deposition of iron in the organism. Report from a meeting of Clinical Investigators held in Basle, Nov. 16, 1961.
2. Imhoff, P.: Results with desferrioxamine in pathological iron deposition. Report on a round table discussion of the Swiss Hematology Society in Lugano, May 18, 1962.
3. Annotations: New treatment of hemochromatosis? Lancet, **1**:1172-1173, (June 2) 1962.
4. Bannerman, R. M., Callender, S. T. and Williams, D. L.: Effect of desferrioxamine and D.T.P.A. in iron overload. Brit. Med. J., **2**:1573-1577, (Dec. 15) 1962.
5. Wöhler, F.: Treatment of haemochromatosis with desferrioxamine. Acta haemat., **30**:65-87, (Aug.) 1963.
6. Moeschlin, S. and Schnider, U.: Treatment of primary and secondary hemochromatosis and acute iron poisoning with new, potent iron-eliminating agent (desferrioxamine-B). New England J. Med., **269**:57-66, (Jul. 11) 1963.
7. Wöhler, F.: Treatment of haemochromatosis with desferrioxamine. Ciba International Symposium, Springer-Verlag, 1964, p. 551.
8. Hwang, Y. F. and Brown, E. B.: Studies of effects of desferrioxamine on human iron absorption and excretion. J. Lab. & Clin. Med., **62**:885, (Nov.) 1963 (Abstract).
9. Hildner, F. J. and Monto, R. W.: Effective chelation of excess body iron with desferrioxamine-B. Clinical Research, **11**:294, (Oct.) 1963 (Abstract).
10. Bothwell, T. H. and Mallett, B.: Determination of iron in plasma or serum. Biochem. J., **59**:599-602, (Apr.) 1955.
11. Dacie, J. V., Smith, M. D., White, J. C. and Mollin, D. L.: Refractory normoblastic anemia: clinical and haematological study of seven cases. Brit. J. Haemat., **5**:56-82, (Jan.) 1959.
12. Vilter, R. W., Jarrold, T., Will, J. J., Mueller, J. F., Friedman, B. I. and Hawkins, V. R.: Refractory anemia with hyperplastic bone marrow. Blood, **15**:1-29, (Jan.) 1960.
13. Björkman, S. E.: Chronic refractory anemia with sideroblastic bone marrow; study of four cases. Blood, **11**:250-259, (Mar.) 1956.
14. Heilmeyer, Von L., Emmrich, J., Hennemann, H. H., Schubothe, H., Keiderling, W., Lee, M. H., Bilger, R. and Bernauer, W.: Uber eine neuartige hypochrome Anämie bei zwei Geschwistern auf der Grundlage einer Eisenverwertungsstörung: Anaemia sideroachrestica hereditaria. Schweiz. Med. Wschr., **89**:1237-1238, (Oct. 12) 1957.
15. Section on Iron Overload in Iron Metabolism. An International Symposium Sponsored by Ciba, ed. by Gross, F., Springer-Verlag, Berlin, 1964, p. 296.
16. Beutler, E., Fairbanks, V. J. and Fahey, J. L.: Treatment of Iron Deficiency: Iron Poisoning. In Clinical Disorders of Iron Metabolism. New York, Grune & Stratton, 1963, pp. 194-212.
17. Bothwell, T. H. and Finch, C. A.: Pathologic and Clinical Aspects of Iron Overload. In Iron Metabolism. Boston, Little Brown & Co., 1962, pp. 364-434.
18. MacDonald, R. H.: Hemochromatosis and Hemosiderosis. Springfield, Illinois, Charles C Thomas, 1964.
19. Addendum No. 2. Orientation data on Desferal, Ciba Pharmaceutical Co., 1963.

University of Iowa
College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 23-YEAR-OLD, RIGHT-HANDED, white, male maintenance worker was admitted to University Hospitals in coma. One year previously he had suffered multiple injuries in an automobile accident and had been unconscious for about one week. At that time he had suffered a penetrating injury of the left eye, a frontal skull fracture, and lumbar vertebral fractures. Following early recovery, there had been persistent watery drainage from his nose for a period of three or four months. During that time he had complained occasionally of a sensation of air bubbling into the front of his head, and of coughing and sneezing. He had returned to normal activities, but his left eye had remained medially deviated and his vision had been defective.

Three days before entrance, he had developed a cold, accompanied by fever and headache. The following day, he had returned home early from work, complaining of severe backache and headache. Later that day, he had become irrational, and it was thought that his symptoms might have been due to excessive doses of Dristan. He had complained of a severe headache, and had been violent and uncontrollable. About 36 hours before his admission to this hospital, he had become unresponsive and febrile.

Physical examination on admission revealed a comatose man with a rectal temperature of 107° F. His pulse was 120/min., and his blood pressure was 130/90 mm. Hg. His neck was rigid. There was no evidence of recent trauma about his head, and his ear drums appeared normal. His left eye was deviated medially. There was evidence of an old pupillary injury on the left, but both pupils reacted sluggishly to light. The optic disc was normal on the right, but poorly visualized on the left. The patient moved all extremities to painful stimuli. Examinations of the abdomen, chest and heart were unremarkable. The urine had a pH of 5 and a specific gravity of 1.025, with 3+ proteinuria. It was negative for blood or sugar, and contained many granular casts. The hemoglobin level was

17 Gm./100 ml., and the white blood cell count was 19,300/cu. mm., with 86 per cent neutrophils on peripheral-blood smear. A lumbar puncture disclosed a cerebrospinal-fluid pressure of 600 mm. H_2O. The fluid was yellow and opalescent, and contained 600 white blood cells, mostly polymorphonuclears, per cu. mm. The Pandy test was 4+. There was no sugar in the spinal fluid, and the total protein was 520 and the chloride 111 mg. per cent. A Gram stain of the spinal fluid revealed Gram-positive diplococci, and spinal-fluid cultures grew Diplococcus pneumoniae that was sensitive to penicillin, chloramphenicol and tetracycline. The serum electrolytes were within normal range, as were the blood urea nitrogen and creatinine, and the blood sugar was 140 mg. per cent. Roentgenograms of the skull and of the chest were interpreted as normal, except for some clouding of the right frontal sinus and mild left-apical pleural thickening.

During the first 12-hour period, the patient received 50 million units of penicillin intravenously; 3 Gm. of chloramphenicol; and 5 Gm. of sulfadiazine. The following day he received 45 million units of penicillin, 3 Gm. of chloramphenicol; and 6 Gm. of sulfadiazine intravenously. Similar dosages were continued through the next several days. Twelve hours after admission, the patient's rectal temperature had dropped to 101.4° F., and his responsiveness had slightly improved. Fluid maintenance was largely by the intravenous route. During his hospitalization, urinalysis revealed a continued mild proteinuria, but with minimal cellular content on microscopic examination. The hemoglobin level dropped from 17 to 11.9 Gm. per cent in 18 days, and the white blood cell count remained somewhat elevated, dropping to 10,700/cu. mm. on the eighteenth day. During that time, the differential blood smear revealed a heavy preponderance of polymorphonuclear leukocytes. Serum electrolytes were never in the abnormal range.

By the sixth hospital day, the patient had improved enough to answer a few questions, and was able to carry out simple commands and to move his extremities. He continued to exhibit marked nuchal rigidity with the head extended. A moderately-elevated blood pressure, in the systolic range of 140 to 160 and diastolic of 110 to 120 mm. Hg, continued. He was never afebrile, and his rectal temperature varied from 99° to 103° F. during the remainder of his hospital course. Antibiotic therapy was continued throughout his hospitalization.

On the ninth hospital day, lumbar puncture was repeated. The CSF pressure was 240 mm. H_2O, and the fluid was slightly yellow and cloudy. There were five lymphocytes, and the total protein was 292 and the sugar 25 mg. per cent. The blood sugar was 98 mg. per cent. A culture was negative at that time. The patient resumed feeding himself. On the thirteenth hospital day, a portable electroencephalogram was done. The record was considered abnormal, with diffuse slow activity and no definite lateralizing signs. Lumbar puncture was repeated eight days later, and again the fluid was slightly xanthochromic and cloudy, with a total protein of 309 mg. per cent, eight lymphocytes, and 12 mg. per cent sugar. The blood sugar was 80 mg. per cent.

Two days later, the patient began to deteriorate. He had difficulty in handling his secretions and in maintaining his airway, and he became less responsive. A concomitant elevation of rectal temperature to 103° F. occurred. On the twenty-sixth hospital day, a trephine of the right frontal sinus was done. An edematous mucosal lining without pus was present, and a fracture line was identified in the posterior wall of the right frontal sinus. Cerebrospinal fluid was leaking through that fracture line. On the following day, a right carotid angiogram was performed and interpreted as being within normal limits. The patient's course progressively worsened, and respiration ceased on the twenty-ninth hospital day.

CLINICAL DISCUSSION

Dr. Maurice W. VanAllen, Neurology: Mr. Zacherle will give the students' analysis of the case.

Mr. B. Zacherle, junior ward clerk: We believe the patient had an acute bacterial meningitis. We have evidence of the probable portal of entry in the history of cerebrospinal-fluid rhinorrhea, probably secondary to the trauma that he incurred in the automobile accident one year prior to his final illness. We also have the history of a head cold that began one day prior to the onset of his final symptoms. Since Diplococcus pneumoniae was cultured from the cerebrospinal fluid, we believe we also know the organism.

The history and the physical and cerebrospinal-fluid findings are characteristic of an acute pneumococcal meningitis. The electroencephalogram and angiography that were obtained are compatible with that diagnosis. The patient didn't do well, and we believe his eventual death was probably due to one or a combination of several possible complications of such a meningitis, none of which we feel can be ruled completely in or out at this point. A good possibility is that the exudate from his meningitis may have undergone organization, obstructing the flow of cerebrospinal fluid, perhaps through the foramen of Luschka and Magendie. Or it may have obstructed the absorptive surfaces of his meninges, either or both of which factors could have led to an increase in intracranial pressure.

You may recall from the protocol that the patient did have an increasing systemic blood pressure. This, in turn, may have affected the vital centers in his medulla. He may also have developed numerous small abscesses in his cortex. He may have developed a large brain abscess, and I'll return to that again in a moment. In the acute phase of his illness, he certainly had a very high body temperature, and he may have sustained a considerable degree of neuronal damage from it.

We must also remember that angiography is not completely without danger.

The differential diagnosis in this case is a bit of a problem because the facts seem so straightforward. Among other infectious processes that we felt we must consider were brain abscess and subdural abscess. We feel that the nonspecific diffuse findings on the electroencephalogram, the angiography and, most importantly, the history, probably rule out a brain abscess or a subdural abscess secondary to the initial trauma that he had sustained a year earlier in the auto accident. We also feel that these findings cast doubt upon the possibility that such an abscess might have developed secondary to the onset of his ultimate illness. We are keeping in the back of our minds the possibility of an underlying neoplasm or a vascular disease, but in view of the history, the physical findings, the laboratory test results and the hospital course, we feel relatively confident of the diagnosis of acute pneumococcal meningitis.

Dr. VanAllen: We have a distinguished guest, today, to analyze and discuss this case. Dr. A. B. Baker is professor of neurology at the University of Minnesota Medical School, and he is here today as a guest lecturer at our postgraduate conference on adult and child neurology. Dr. Baker, will you proceed with an analysis of this case?

Dr. A. B. Baker, Neurology, University of Minnesota: This case demonstrates that a well-trained student and a well-trained practitioner do have the skills to analyze a case as well as a highly trained neurologist. Actually, as you will see, I shall add very little to what has already been offered you by Mr. Zacherle. I may expand on some of his comments, but probably my conclusions won't be much more enlightening.

On the surface, the case seems to be a fairly straightforward one, but it does bring up certain problems. This patient, of course, had been in an accident, and he did have a skull fracture. There is no question that he had a fracture of the bone connecting the subarachnoid space with the external environment. By developing a rhinorrhea, a patient promptly informs us that he has incurred a fracture that connects the external environment with the subarachnoid space. *A priori,* this presents a very severe potential focus of infection. One would suspect, from the amount of his injury, that he probably also had a basilar skull fracture. Indeed I'd be very much surprised if at autopsy a basilar skull fracture wasn't found, as well as a fracture of the cribriform plate, despite the negative roentgenograms. And I'd challenge the x-ray department to reexamine for the fractures that one would expect on the basis of the patient's history. The fact that they weren't seen on roentgenograms merely tells us that historical evidence is often more reliable than is x-ray evidence.

The second point of interest is that this patient apparently recovered completely from his accident, in spite of the fact that he had a focus of infection or a potentially infected area in his subarachnoid space. I should like to emphasize the fact that the subarachnoid space should be treated in a gingerly fashion. As neurologists, we are very uneasy about tampering with the subarachnoid space. Inserting any foreign body or exposing the subarachnoid space to the external environment should be avoided unless absolutely necessary. I refer now not only to a situation of this sort, but also to a medical situation where one sometimes tampers with the subarachnoid space and runs the danger of producing a focus of infection there. In the present case, a year following the patient's apparent recovery from his injury, he developed a full-blown, obvious pneumococcal meningitis.

There is no question that this man had a pneumococcal meningitis, but one has excellent grounds for questioning the possibility that he had a *pure* pneumococcal meningitis. In practically all cases the infection is a pneumococcal meningo-encephalitis. The meninges may be infected predominantly, but there almost always is an extension of the infection along the perivascular space into the subcortex, producing a pneumococcal meningo-encephalitis. Therefore, even though one may clear up the meningitis, there often is a recurrence because the focus of infection in the brain hasn't been controlled. In pneumococcus meningitis, therefore, we have a tendency to treat our patients very intensively, and over a long period of time, in the hope that we may be able to overcome the encephalitic component as well as the meningeal component. I think it would be much more accurate to say that this patient had a pneumococcal meningo-encephalitis, rather than a meningitis alone. Following the pneumococcal meningo-encephalitis, he improved temporarily under intensive therapy, and then went downhill and finally expired.

The question now arises as to what happened to him. In the differential diagnosis, there are a number of conditions that might be considered. Did the patient have only a pneumococcal meningo-encephalitis, with enough brain involvement so that even though the meningitis was partially cleared up, the cerebral involvement continued to progress to a fatal outcome? It might be of interest to note that the onset of this patient's illness was marked by a violent and uncontrollable headache, and that within 36 hours he was unresponsive and febrile. You will notice that later that day, after complaining of headache, he became irrational. It takes a pretty fulminating infection to make a patient irrational, and there is a very good chance that this man's illness began with a very severe meningo-encephalitis, and that the encephalitic component produced the cerebral picture, rather than that the meningitis alone did so.

There are other considerations to which one must give thought in a case of this sort. One must consider the possibility that along with his meningitis and in spite of his treatment, he may have developed a brain abscess, and that the brain abscess actually produced the fulminating course.

One must also consider the possibility of an epidural abscess or even a subdural abscess as a complication of this particular picture. Finally, if one wishes to extend the differential diagnosis further, one might also consider the possibility that he could have had a subdural hematoma that became infected and produced the progressive symptomatology which was seen in this case.

As one considers these various conditions, he feels that the epidural, subdural and intracerebral abscesses are probably not really good possibilities, for at no time did the patient present any evidence of focal symptomatology. The entire picture was that of a very widespread, diffuse process implicating the total function of the brain, rather than any particular area. One would have to conclude that this patient apparently had a focus of infection, and a year later developed a pneumococcal meningo-encephalitis. It will be very interesting to see the pathologist's slides of the brain itself, but I think the encephalitic component is what produced the terminal picture.

What killed the patient? Why did he die? One reason for his failure to respond to chemotherapy is that he had a severe encephalitic component in his illness. That is one of the reasons why we get into trouble in pneumococcic meningitis with recurrent infections, and also with a failure to respond. The chemotherapeutic drugs don't get into the brain as well as they get into the meninges, and if the patient has extensive brain involvement, therapy frequently won't help. These individuals respond temporarily because of the response of the meningeal infection, but they continue to go downhill because of the brain involvement. That, I think, is what occurred in the present case. The acute history is fairly rapid for the development of adhesions along the base of the brain. This man's whole history covered only a few weeks, and it takes longer than that to develop enough adhesions to produce obstruction or to produce hydrocephalus with secondary increased pressure and death.

In conclusion, I should like to emphasize once again that in any treated case of pneumococcal meningitis, the patient under therapy may continue to get along well for a month or two, and then suddenly may redevelop symptoms of a meningitis or severe meningo-encephalitis. When he is treated again, he recovers only to have the condition recur. There was a report in JAMA of a patient who had 20 separate infections of pneumococcal meningo-encephalitis while under therapy.

Our method of handling pneumococcal meningitis, therefore, is to treat patients very intensively. We give them very large doses of antibiotics—four, five or six times the usual dosage—always giving the antibiotic intravenously, with the hope that by this means we may be able to get a higher concentration of medication into the subcortical and brain foci, as well as into the meningeal focus. To patients with a pneumococcal meningitis, or with what we think of as a meningo-encephalitis, we often give as high as 100 million units of penicillin daily for a period of weeks in an attempt to control that cortical infection. I should be interested to hear what Dr. Sahs has to say about this regimen, since he is much more experienced in meningeal infections than I am.

One other point might be mentioned. How should this patient have been handled at the time of his accident? Here was a man who had had an automobile accident. He had a fracture of the cribriform plate into the subarachnoid space, for he had a rhinorrhea. He was leaking spinal fluid. There was a good chance that he also had a basilar skull fracture, with another focus of infection into the subarachnoid space. He got well, and he went home. Was that enough, or should we have anticipated that he'd get a pneumococcal meningitis, and have treated him intensively at that particular time and have watched him very carefully thereafter? I can tell you that any time we suspect a patient of having a fracture along the base of the brain, we treat him intensively with antibiotics in an attempt to prevent any focus from developing, even though he may be doing well and may be showing no signs of meningitis. We do that as a protective measure for our patients.

Dr. VanAllen: Thank you very much, Dr. Baker. I think it is easy to understand why you are popular as a speaker and as a teacher. Dr. Pribram, our neuroradiologist, will take up the radiology here. Dr. Pribram, your art and science have been challenged.

Dr. H. F. W. Pribram, Radiology: First, I'd like to issue a challenge of my own. I dispute the view that spontaneous closing of a cerebrospinal fistula indicates that the fistula has healed. I don't think one can make any such assumption. If cerebrospinal-fluid rhinorrhea ceases, it merely indicates that the leak has been sealed; it doesn't necessarily mean that the dura has healed. Factors that prevent healing of a dural laceration are arachnoid or bony spicules that become interposed between the edges of the dura.

Radiologic investigation of this patient should have commenced one year before his admission. Once a patient is admitted in coma, he is not accessible or amenable to radiology. I would suggest that in any patient who has incurred a subfrontal fracture or a possible ethmoidal fracture, cerebrospinal-fluid rhinorrhea or intracranial air, investigations have to go further to determine whether or not a dural tear is present. Now, how does one set about such an investigation? First of all, we take our routine skull roentgenograms. These won't show us anything, just as these in this case didn't show us anything. Then we take tomograms and oblique views in order to see the ethmoidal region, the cribriform plate and the frontal sinuses. If we find a fracture, we must decide whether a dural tear is present. Here, one needs a little cooperation between the neurosurgeon and the radiologist. One of the ways of demonstrating a dural tear and adhesions is to introduce air into the subdural space and to take tomograms. One puts a frontal

burr hole on one side, and then introduces some air into the frontal subdural space. Anteroposterior and lateral tomogram films are taken to see whether the air will run freely. When one has done one side, he turns his attention to the other side and does the same. When he has satisfied himself that there is no dural perforation, everything is fine and dandy. But as I said before, the mere cessation of cerebrospinal-fluid rhinorrhea doesn't indicate anything other than that it has stopped. If the frontal lobe, dura and arachnoid prolapse, they may adhere to the fracture site and seal the leak.

This case was a typical one of neglected frontal fracture. There are others in the literature. Linnel and Robinson described such a patient; he died of meningitis five years after such a fracture. Stenger described one who died of meningitis 31 years after a posterior frontal fracture. Morley and Hetherington had one nine years after injury, and Jefferson and Lewtas had one at 3½ months. So this case is nothing unusual. Calvert, who was particularly interested in ethmoidal and frontal fractures, reported a series of 20 patients who were left untreated. Eleven of them died of either abscess or meningitis. Also, six of 128 presented with meningitis, but without any previous history of rhinorrhea.

So, you see, it's all very well to challenge the radiology department, but the challenge should be presented shortly after the patient's accident—or one year before the terminal episode in the case of the man now under discussion. After a patient has lapsed into coma, there is very little that one can do for him.

I saw the skull films on this patient at the time he was in the hospital, and neither then nor now can I definitely identify a fracture in them. I feel very strongly about radiologic diagnosis. A radiologic diagnosis, in my view, has to stand on its own merits. Everyone in this conference room knows there is a fracture present. I know it, but before I can decide that a fracture is visible on the roentgen film, I have to point it out to the satisfaction of each one of you. I can't do that from these films. I don't think we have the right roentgenograms, and therefore I can't carry it any further.

As for the arteriogram, there is no evidence of subdural abscess or intracranial abscess; that is, there is no radiologic evidence of such an abscess. It is possible for small, scattered abscesses to be present without producing any abnormality on the angiogram. Thus, an angiogram won't exclude this possibility 100 per cent. I think that is an unlikely possibility, for there is often a great deal of edema around such abscesses, and the normal thing is for these to appear much bigger than they really are, rather than smaller. Whether any further studies should have been done, I don't know. Personally, I wouldn't expect an abscess to be found at autopsy.

Somebody mentioned dangers of angiography. In this sort of case, I think there is no risk in angiography. The angiographic risk lies not in the 23-year-old, but in patients suspected of having or found to have cerebrovascular disease.

Dr. VanAllen: I think you've defended the art and science quite well, Dr. Pribram. I believe I need hardly reiterate the lesson. It is quite clear that a cerebrospinal-fluid leak is dangerous and requires attention. Its cessation should give one only limited reassurance about the possibility of future trouble.

Dr. T. H. Kent, Pathology: The principal necropsy findings were in the head. There was an ununited linear fracture of the posterior wall of the right frontal sinus, associated with a small overlying tear in the dura. No other fractures were found at autopsy. The leptomeninges exhibited a diffuse chronic inflammatory reaction, with focal areas of suppuration. Multiple recent and organized thrombi were present in arachnoidal arteries and veins, and the underlying cerebrum and also the brain-stem contained small areas of infarction. In addition, there was considerable neuronal degeneration in many areas of the brain. Mild hydrocephalus was also present, and probably had resulted from damage to the arachnoidal villi. Death was attributed to the progressive brain damage.

I have a number of slides to illustrate these findings. The first is a view of the anterior fossa, which is pointed slightly up. In this region you can see the beginning of the fracture at the upper end of the cribriform plate which extended into the right frontal sinus and possibly into the posterior wall of the left frontal sinus. Here is the probe which goes through the small hole that was present in the dura.

The next slide shows the histologic appearance of this fracture margin. As you can see, the free edge of the fracture margin is rounded and composed of mature bone. Apparently the fragments weren't in close enough apposition to heal by bony or fibrous union.

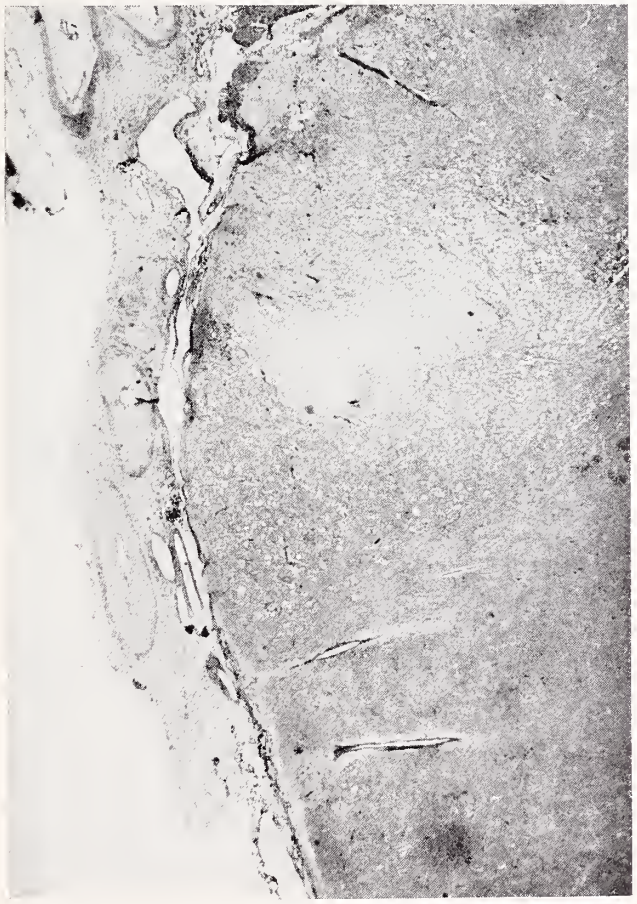
The next slide shows the appearance of the lateral aspect of the brain. There is a great amount of cloudy swelling of the leptomeninges here over the frontal lobe, and in the sylvian fissure. Next is a view of the superior surface of the cerebrum, the longitudinal fissure and the area of attachment of arachnoidal villi. Again, there is cloudiness of the meninges, and there is a thrombosed vessel. This area of attachment of arachnoidal villi appears somewhat thickened. On a cross-section of this same area, one can see an area of hemorrhage about a thrombosed meningeal vessel. There is also thickening of the meninges, and a small cortical infarct is present. There also appears to be some degeneration of the superficial portion of the grey matter. A cross-section of the mid-portion of the brain shows small areas of softening near the putamen, and a larger area of softening at the lower end of the internal capsule. Note also the third ventricle and the lateral ventricles. They are moderately dilated. A high-power view of that same area illustrates the infarct at the lower end

of the internal capsule. A microscopic section of the superior surface of the brain shows a greatly thickened arachnoid which contains a moderate number of inflammatory cells, mostly lymphocytes, plasma cells and histiocytes, but also some scattered polymorphonuclear leukocytes. This is typical of the cloudier areas that were seen grossly.

The meninges show a small, walled-off area of suppuration—a micro-abscess. The surrounding meninges show rather diffuse inflammatory reaction. This artery is practically occluded by organized thrombus. The veins also show some intimal thickening due to organization of thrombotic material. There has been some recanalization. A higher-power view of this same area shows the intima to be greatly thickened due to loose fibrous tissue which represents organized blood clot.

Another small artery on the surface is filled with more recent thrombus, and the arterial wall is infiltrated with polymorphonuclear leukocytes. Acute inflammatory cells are also seen in the surrounding meninges. Micro-abscesses are seen, and the meninges are diffusely involved.

One can see that some of this inflammatory reaction was carried down into the brain substance along the vascular structures. In the underlying cortex there was an area of early infarction. The larger infarct of the internal capsule was older. It was filled with macrophages containing lipid debris. Diffuse neuronal damage was present. Many pyramidal neurons were present, and some were widely scattered and much more difficult to visualize. At higher power, one can see a few remaining neurons, but most of them appear quite degenerate, and many spaces are filled with several microglial cells.



Cerebral cortex and meninges, illustrating chronic meningitis, organized thromboses in meningeal vessels, and small, recent infarct of cortex.

I might comment on the encephalitis. We didn't see a great deal of actual inflammation within the brain substance, except along the vessels, but of course there was diffuse brain damage which we felt was on the basis of thrombosed meningeal vessels, rather than actual infection in the brain.

The reason for the chronicity in this case, in spite of the massive treatment, is not completely clear to me. The continued presence of infection is difficult either to establish or to exclude. We took two swabs of the meninges, and one of them proved sterile and the other grew out Staphylococcus epidermatus, Escherichia coli and diphtheroids. We felt that those organisms were the most likely contaminants. We also did some Gram stains of the tissues and saw some scattered bacilli, but they weren't in the more inflamed areas. They weren't associated with acute inflammatory reactions, and we couldn't really evaluate whether they had been responsible for a continuation of the infection or not. It seems most likely to me that the entire picture can be explained on the basis of the initial damage, with thrombosis and continued reaction to the necrotic tissue and ischemia.

Dr. VanAllen: Thank you very much, Dr. Kent. Dr. Baker, would you like to say anything about the findings?

Dr. Baker: These findings, of course, are very consistent with this type of infection. The point I want to raise is that the patient lived about 29 days after the onset of the infection. On looking at the tissues, one wonders whether this type of tissue reaction in the meninges is only one month old. My own impression is that the changes appeared a little older than one month, and one would have to raise a question as to when the patient's illness really started. Though not very likely, it is possible that one could get such a very severe fibrosis and connective-tissue reaction in the meninges within such a short period of time, even under intensive therapy. So the real question is whether this man may not have had a smoldering infection over a long period of time, and that it flared up severely just before he came to the hospital.

Did you do Nissl's stains on the cortex?

Dr. Kent: No.

Dr. Baker: I think that you can't interpret nerve-cell changes without having done Nissl stains on the cortex, for a nerve cell stained with H and E looks very much damaged, but looks perfectly normal when Nissl's stain has been used. With severe infection, secondary changes around

the nerve cells often occur, but must be demonstrated with special stains.

One might question the presence of severe nerve-cell changes in this case. I also wonder whether you followed any of those blood vessels within the areas of infarction, to see whether any of them were infected. The presence of deep-seated areas of infarction situated right in the middle of brain tissue without extension to the surface would make one wonder whether the smaller vessels weren't involved. It would have to be a deep-seated vessel within the cortex, for a cortical vessel would cause a wedge-shaped destruction extending to the surface.

Dr. Kent: We didn't do serial sections, but what you suggest is quite possible.

Dr. Adolph L. Sahs, Neurology: I'd like to comment very briefly on the massive doses of penicillin that were administered to this patient. Though the protocol indicates, "Large doses of penicillin were continued throughout this man's hospital stay," we started with a large dose, 50 million units per day, and although we did not keep to that range, the daily doses amounted to as much as 20 million units per day. Frankly, I don't know what an "average" or a "large" dose of penicillin might be. In some individuals, the dosage might be as much as 100 million units per day; in another, 50 million units.

My second point is an answer to anyone who may be inclined to ask: "Was cortisone given?" It was considered, but steroid therapy wasn't used on this patient. Personally, I haven't been entirely convinced that steroid therapy has made a statistical difference in cases of this sort. It does have its advocates, but in general, I don't believe there have been any carefully controlled studies.

Dr. VanAllen: Now, I think it's appropriate to call upon Dr. Perret, chief of neurosurgery, who might have been able to prevent this outcome if, a year earlier, Dr. Pribram had demonstrated the fracture.

Dr. George E. Perret, Surgery: I think the meningitis could probably have been avoided if the patient had been properly treated at the time of his head injury. The history doesn't give us much detail about the early management of the case. We don't know what happened, and we don't know how he was treated. If the patient had been in this hospital, much attention would have been paid to the spinal-fluid rhinorrhea, after diagnosis and treatment of the acute craniocerebral injury. We would have put the patient on antibiotics immediately, and we'd have kept him on antibiotics as long as the spinal-fluid rhinorrhea persisted. We would have tried to find the site of fracture from which the spinal fluid came. If we were unable to find a fracture by means of the roentgen films, we still would have assumed that a fracture was present and was producing a communication between the subarachnoid space and one of the paranasal sinuses.

In the fresh case, if one is unable to determine the location of the spinal-fluid leak or of the fracture, introduction of air into the subdural space allows radiographic visualization of the subdural space, and sometimes of the area of dural tear. In old cases like this one, and in the presence of meningitis, this procedure doesn't help, for exudate and scar are present, with the result that a pathway may remain open for the spinal fluid while the surrounding spaces are completely sealed off.

Oftentimes the clinician may be able to locate the fracture by watching the route of spinal-fluid escape. Usually, if it runs out of the right side of the nose, it is in the right frontal sinus, and if it is on the left side, it is on the opposite side. This isn't always true, however. A rhinologist, as he inspects the inside of the nose, can also say fairly accurately whether the escaping fluid is coming from the frontal sinus, from the sphenoid sinus or from the ethmoid sinuses, for the apertures of the sinuses are in different locations within the various conchae of the nose.

Once the place of spinal-fluid leak has been ascertained, it should be repaired. Spinal-fluid rhinorrhea isn't uncommon with frontal fractures, basal fractures, or fractures of the cribriform plate, but it usually stops spontaneously within two or three days, or sometimes eight days, following the injury. Rarely do we see spinal-fluid drainage, either from the ear or from the nose, lasting more than 10 days. If the drainage persists for more than 10 days, the dural tear should be repaired surgically.

The surgical repair, of course, involves a craniotomy. It involves visualizing the tear in the dura and visualizing the fracture. Sometimes the dura is so torn and so ragged that it can't be sutured with fine silk or whatever other material is at hand, and it becomes necessary to use a piece of temporalis fascia or sometimes galea to repair the defect.

During the whole period of spinal-fluid rhinorrhea, and for many weeks before and after the operation, the patient is kept on large doses of antibiotics, in the hope of preventing infection, meningitis or brain abscess.

Dr. VanAllen: Dr. Cairns, would you like to tell us about the findings in the frontal sinus?

I might say that sometimes one is in a dilemma in regard to whether the rhinorrhea he is seeing in such a patient is due to a leak of cerebrospinal fluid or not. We can test the fluid for sugar, much as one would test urine with Testape, on the presumption that a positive test for sugar indicates that one is indeed dealing with spinal fluid, rather than with the more common fluids of rhinorrhea.

You will recall that the frontal sinus was explored a few days before the patient's death, on the chance of finding an abscess.

Dr. A. B. Cairns, Otolaryngology: From the previous findings, it was assumed that the cere-

brospinal-fluid leak which had been present earlier in the patient's disease had been sealed. On the x-ray findings, there was some clouding in the frontal sinus that was difficult to interpret. There was a possibility that an extradural abscess was present with no localizing signs. Years ago, when frontal-sinus pathology was a frequent cause of extradural and subdural abscess, radiologic findings weren't able to localize this specifically, and the finding of a cloudy sinus might not completely rule out a fracture or rule in an associated abscess. Thus it was felt that two possibilities existed—a fracture or an abscess in the frontal sinus. Exploration should tell us which, in fact, was present.

For this reason, a trephine opening in the frontal sinus was made on the right, and the posterior wall of the right frontal sinus was examined. The mucosa in the frontal sinus was edematous, but no pus was found in that area. There was a linear fracture near the interfrontal sinus septum, extending from the superior margin of the sinus down to the floor. It was impossible to identify the inferior margin of this fracture. It was felt that perhaps it extended onward, either toward the cribriform plate area, or further down into the frontal bone. The nasofrontal duct appeared to be open. It wasn't probed at that time, but on the assumption that it could possibly have been occluded, a trephine opening was then made into the opposite frontal sinus, so that drainage could be afforded through the opposite nasofrontal duct. There was a free flow of spinal fluid through the fracture line at the time of the examination.

Nothing was done to the area; i.e., the mucous membrane was left intact, and the sinus was closed with no further drainage, on the assumption that the nasofrontal duct on the opposite side would continue to afford free drainage from the sinus.

Dr. VanAllen: Thank you very much, Dr. Cairns. Are there any questions?

Unidentified Questioner: Assuming that no fracture lines could be found, but that the fracture continued to drain over a period of years, could his physicians have kept him on prophylaxis indefinitely, like a rheumatic-fever patient, and on intensive prophylaxis whenever he had a cold?

Dr. Baker: If our patient continued to drain, even though no fracture was found, I'd call our surgeons to repair the injury. We'd know he had a fracture, and if it didn't seal itself within a short period of time, I think the surgeons should go in, find it and sew it up.

Dr. Sahs: Just one more point. We are faced with this problem occasionally—once or twice a year at this hospital. I recommend that these patients be explored by the neurosurgeons, even though we aren't always able to demonstrate a fracture by x-ray.

Dr. Henry E. Hamilton, Internal Medicine: Do our neurosurgeons respond readily to your beck and call?

Dr. VanAllen: Almost at once. They're always delighted to explore, particularly when there has been difficulty in identifying the site of the leak.

ANATOMICAL DIAGNOSES

1. Unhealed fracture, posterior table of right frontal sinus, associated with unhealed dural tear
2. Chronic meningitis, severe, with
   a. recent and organizing thrombi, meningeal vessels
   b. infarcts, small, cerebrum and brain-stem
   c. hydrocephalus, mild
3. Acute congestion of viscera
4. Patchy interstitial pneumonitis
5. Organizing thrombi, periprostatic veins.

STUDENTS' DIAGNOSIS

Acute pneumococcal meningitis.

DR. BAKER'S DIAGNOSES

Pneumococcal meningo-encephalitis
Fracture of cribriform plate
Possible basilar skull fracture

Guide for Part-Time Industrial Physicians

A new guide, "Personal Protective Equipment for Employees in Industry," has been published in the April, 1965, issue of ARCHIVES OF ENVIRONMENTAL HEALTH. Produced and approved by the AMA Council on Occupational Health, this guide covers an area not heretofore covered from the viewpoint of, and for use by, the medical profession.

Dr. Henry F. Howe, director of the AMA Department of Occupational Health, explains that it is intended primarily for physicians who serve industry part-time or on-call, and to whom industrial employees come for preplacement and periodic examinations, and for diagnosis and treatment. Its purpose is to acquaint the physician with the need for, and the selection and use of, clothing and devices to protect workers from hazards that may result in occupational illness or injury.

"Full-time physicians in industry presumably are well acquainted with the matters discussed, but even they may find, in this guide, an effective review of the subject," Dr. Howe says. By studying the material presented in the guide, reference sources and checklist, the physician should be able to develop an understanding of the capacities and limitations of protective equipment for a specific hazard, as well as the need for training in its use, care and maintenance.

Individual copies of the guide can be obtained without charge from the AMA Department of Occupational Health, 535 North Dearborn Street, Chicago 60610.

Editorials

OUR YOUTH PROBLEM

In a strong and provocative article entitled "Adolescence: A Subculture in United States Society,"* Dr. Doris H. Milman, a New York pediatrician, points out that there were 25 million young people in this country between the ages of 12 and 19 years, in 1964, and of that group, 1.5 million were unemployed, unschooled and unskilled.

Adolescence has long been recognized as a phase in the physiological and psychological development of the individual, and certainly there have always been a wealth of characteristics to mark the boys and girls at that stage of life as a group apart from all others. According to Dr. Milman, however, adolescence has attained the status of a subculture in America, quite abruptly, during the past two decades. This subculture evolved as a consequence of affluence and leisure, for it is only an affluent society that can afford to maintain a large segment of its population in a state of non-productivity.

The standards observed by adolescents are painfully familiar. Conformity to and acceptance by their group, they regard as fundamental. Fun, leisure and material things are of major importance to them. Physical attractiveness and popularity are matters of great concern. Happiness is their goal. Rejection of adult values and standards of authority are common. Boredom, restlessness and a desire for excitement are their usual attitudes.

According to Dr. Milman, the development of this subculture in our country can be ascribed to many psychological and social conditions, but the basic cause is inherent in adolescence itself—a state during which vast reservoirs of physical and emotional energy necessitate activity, expression, challenge and experimentation. The adolescent requires constant reinforcement of his sense of identity. He still craves direction, assurance and approval, but at the same time, his uncertainties need to be resolved by success, prowess and recognition. In search of identification, he seeks challenges greater than those within himself and his home. He needs to feel that he is shaping some plan and making some progress toward adult goals in life. It isn't surprising that during the stress of growing up, a youth should find himself in conflict with adult values, and adult rules and regulations.

Among the features of adult American life which have contributed to the evolution of an adolescent subculture, the transition from a simple, family-based, agrarian society to an urban, industrial one is in a large measure responsible. That transition has deprived young people of society-serving roles, and has deposed parents from their authoritarian control. In earlier days, young people had well defined places in the family economy, and their roles during their years of growing up, and beyond, were clear-cut and assured. Adults were certain of their values and confident of the future. By contrast, parents of today, in our technical and urban world, are uncertain of the future, and the guidance they attempt to give their children has become hesitant, conditional and uncertain.

In addition to the transition in our way of life, there are other elements in our society which have had deleterious impacts upon the adolescent. Adult society has more or less abandoned the long-held religious and puritan ethic, and materialism and commercialism now prevail. The virtues of hard work and thrift are old-fashioned, and leisure and spending are venerated. The educational system hasn't kept abreast of technology, and thus is failing to provide a job-oriented education or to offer preparation for the leisure which automation increasingly provides. An erroneous concept of self-demand and permissiveness in the philosophy of child-rearing in this country has led to an almost complete lack of discipline and of restraint. There is too great a tendency for parents to abdicate their responsibility for guiding youth, and even the schools and colleges are taking equivocal positions on many controversial issues.

Dr. Milman points out that perhaps the most revolutionary of the trends in our society is the new sexual code. The tradition of the double standard and of chastity for young women has gradually given way to the idea of equality for women. Greater freedom for youth, the custom of steady dating and the availability of the automobile have contributed to promiscuity.

One of the most discouraging trends in our adolescent subculture has been the spread of lower-class values and mores. These include early sexual awakening, premarital pregnancy and early marriage. Vandalism, burglary and other forms of delinquency which formerly were the expressions of lower-class mores have invaded middle-class and affluent suburban areas. Such behavior no longer is confined to "the other side of the tracks." The use of alcohol and drugs, of crimes against persons and against property are on the increase in almost all areas of the country.

After examining the adolescent subculture, Dr. Milman raises certain pertinent questions. What effect does the subculture have upon the larger society? Does going through the present adolescent

* Milman, D. H.: Adolescence: subculture in United States society. BULL. N. Y. ACAD. MED., 41:347-352, (Apr.) 1965.

subculture constitute good preparation for an adult role in our society? Isn't it about time for adults to assume a more active role in shaping adolescent experience better to fit youngsters to meet the needs of the whole society?

If we conclude that the present trend is irreversible, then we acknowledge that social decay is inevitable. On the other hand, if it is the common belief that adult society can assure the preservation of strength, vigor and integrity only through revising its child-rearing practices, then there are 20-some centuries of experience that we can call upon for models.

Dr. Milman concludes her article with a credo for parents and for all others who are concerned with the guidance of youth: "Young people must be actively guided and molded, must learn to combine freedom with regard for others, must accept personal responsibility for the consequences of their actions, must be subjected to the most rigorous intellectual discipline of which they are capable, must be vigorously challenged, must have adult love and support and closeness during the growing-up years, must learn to derive satisfaction from such intangibles as accomplishment and integrity and service and self-respect, and must be convinced of the importance of love and compassion and a reverence for life. Clear expectations on the part of the adult world, consistent discipline, and predictable consequences can do much to provide an inner stability for counteracting some of the cosmic uncertainties. Finally and most importantly, intimate contact with significant adults throughout adolescence can counterbalance the one-sided influence of the teen-age culture and provide the continuity that is necessary for the effective transmission of a culture."

BACK TO NATURE!

"Hiking or walking is man's most natural exercise. We were biological beings before our intellectual or spiritual powers matured. The cells and protoplasm, the blood vessels and tissues, the muscular and circulatory systems have not changed since the days of the cave man. The veneer of progress and civilization is a thin one. The intellectual man and spiritual man can dominate the animal man. But the animal man needs constant renewal. His health is indeed a prerequisite to complete well-being."

The above paragraph is a part of a recent article by Justice William O. Douglas,* in which he commends hiking or walking as invigorating and beneficial to people of all ages. He emphasizes that a stroll is not a hike, and that strolling is tiresome in contrast to the bracing effect of a vigorous hike. Whereas young people can walk competitively, an older person must set his own pace. It is this opportunity to hike at one's own pace that makes this form of exercise preferable to competitive sports for everyone as he grows older. Regular hiking is necessary if one is to avoid having sore muscles, and properly fitted boots will prevent sore and blistered feet. Two pairs of socks are recommended—light cotton next to the skin, and woolen on the outside.

According to Justice Douglas, hiking sloughs off cares in mysterious ways. The outdoors is filled with wonders for those who have knowing eyes or walk with a spark of curiosity. A hike of several hours' duration unravels many a tangled skein of problems. Another very prominent man, Dr. Paul Dudley White, has emphasized the particular importance of walking as a part of the convalescent cardiac patient's regimen.

No group can derive greater benefit from the example and recommendations of Justice Douglas than physicians. Doctor, swear by Apollo to take to the woods!

* Douglas, W. O.: Animal man needs to hike. NEW YORK TIMES MAGAZINE, March 21, 1965.

SHORTCOMINGS OF OMAHA IMMUNIZATIONS

The report of an investigation of the immunization status of high-risk adult population groups in metropolitan Omaha by Lyman, Kirby and Eelkema* should be of considerable interest to physicians in the State of Iowa.

The purpose of the Omaha study was to determine the extent of current immunization among adults whose occupations are such that they are considered high-risk groups—the physicians, dentists, nurses and other hospital personnel, and teachers. In the spring of 1964, each of these groups conducted its individual survey through an appropriate committee. Questionnaires were distributed by mail or in payroll envelopes, and were returned to the Health Department for analysis. Questions were asked not only about immunization status but also about physical examinations, chest x-ray and tuberculin testing, in an effort to determine their acceptance as preventive health measures as compared with immunizations. Immunizations were considered current if they had been performed within the previous four-year period.

The precise number of questionnaires sent out is unknown, for the hospitals were uncertain of the numbers of employees surveyed. A total of 6,030 questionnaires were returned, and the percentages of returns from the various groups ranged from approximately 50 per cent to 100 per cent. Only 67 per cent of physicians and 55 per cent of dentists completed and returned the forms. There was 100 per cent cooperation from almost 1,800 teachers, and questionnaires were received from almost 900 nurses and over 2,800 hospital employees.

Because the schools require physical examinations at regular intervals, some of them annually,

* Lyman, E. D., Kirby, C. D., and Eelkema, R. C.: Immunization status of select high-risk adult population groups. NEBRASKA M. J., 50:160-163, (Apr.) 1965.

Editorials continued...

100 per cent of the teachers had been examined within the previous four years. Eighty-nine per cent of the nurses and 83 per cent of the non-professional employees in the hospitals qualified as having had current physical examinations. Physicians, with only 77 per cent examined, were the least current of the professional groups interrogated.

All of the teachers had had chest x-rays within the four-year period. Seventy-five per cent of the dentists, 63 per cent of the nurses, and 62 per cent of the other hospital personnel had had chest films that qualified as current, but only 47 per cent of physicians had had chest x-rays within the previous four years.

Tuberculin testing had been done within the four-year period in 20 per cent of the nurses and 22 per cent of the other hospital personnel. Since, once it is positive, the tuberculin test is not repeated, the fact that only 3 per cent of responding physicians had had recent tuberculin tests wasn't regarded as especially alarming. Surprisingly, there was no report on tuberculin testing among teachers.

Immunization against poliomyelitis proved to be currently high, as a result of a county-wide Sabin immunization program in the area in 1962.

The survey revealed that protection against smallpox is dangerously inadequate in the Omaha area. Only 38 per cent of physicians, 19 per cent of dentists, 25 per cent of nurses, 21 per cent of other hospital personnel, and 25 per cent of teachers had been vaccinated for smallpox within the past four years. It was pointed out that the present status of smallpox vaccination in the Omaha area is conducive to a repetition of the British experience in 1961, in which the highest mortality and morbidity occurred in high-risk groups of people like these.

The record relating to diphtheria immunization indicated that little effort had been made to keep protection current among adults. Only 31 per cent of physicians and 13 per cent of dentists had received booster injections within the past four years. Just 27 per cent of the nurses, 20 per cent of the other hospital workers, and 22 per cent of the teachers had kept their diphtheria immunizations current.

Tetanus prophylaxis had fared somewhat better than diphtheria immunization, but the record indicated a general disregard of the need for periodic recall injections. Forty-seven per cent of physicians and 27 per cent of dentists had received booster injections of toxoid within the past four years. Forty per cent of the nurses and 35 per cent of the other hospital personnel, but only 32 per cent of the teachers had kept their tetanus immunizations current.

As a result of the survey, the authors concluded that among the high-risk groups, routine physical examinations and chest x-rays are the only generally recognized preventive measures at the present time. Though poliomyelitis prophylaxis appears to be an exception, it cannot be evaluated as a routine preventive practice because insufficient time has elapsed since the widespread Sabin vaccine program of 1962. It is obvious that routine maintenance of immunization for adults against smallpox, diphtheria and tetanus is not being carried out in the Omaha area. Even the physician, with his knowledge of these diseases, does not keep his own immunization current.

They emphasized that if immunization is ever to be made a routine health measure, the physician *first* must bring his own immunization status up to date; and *second*, he must immunize each of his adult patients as a part of the routine in each of the regular health examinations he performs. The immunization of special high-risk groups such as physicians, nurses, non-professional hospital personnel and teachers in special, well-publicized clinics would have a salutary educational impact upon the entire community. The success or failure of such a program, of course, would be determined by the respect shown to it by these health groups for which it had been designed.

The status of immunization of high-risk adults in Omaha certainly isn't peculiar to that community alone. There is nothing to make one believe that the situation is any better on this side of the Missouri River. It must be generally recognized that by neglecting to keep immunizations current, we face the future with a false sense of security.

We heartily support the recommendations that every doctor should bring his own immunization status up to date, and that he should make prophylactic inoculations routine in each annual health-appraisal that he performs.

MENINGOCOCCAL MENINGITIS

A report by Brown and Condit on the subject of meningococcal infections in Californa and at Fort Ord* deserves serious consideration by physicians everywhere. Their study indicates a need for revising some established concepts about the disease, and poses some new problems both in preventing it and treating it.

These California physicians, who are on the staff of the Preventive Medical Service of the California Department of Health, report that there has been a gradual increase in the incidence of meningococcal meningitis in their state since 1959, when there were 190 cases and cyclical incidence reached its low point. Subsequently, there was a gradual rise to 553 cases in 1964, or an increase in the case rate from 1.4 to 3.0 per 100,000 of population in the six-year period.

---

* Brown, J. W., and Condit, P. K.: Meningococcal infections: Fort Ord and California. CALIF. MEDICINE, **102**:171-180, (Mar.) 1965.

The occurrence of meningococcal meningitis at Fort Ord, an Army training center in Monterey County, attracted unusual concern and interest. The present cycle of increased incidence at Fort Ord began in 1961-1962. In 1960 there had been two cases there, and in 1961, six cases. In 1962 the number increased to 38; in 1963 to 64; and in 1964 there were 108 cases of the disease. Of particular significance is the fact that during the last three of those years, meningitis occurred at all seasons of the year, reaching a peak in the summer and fall of 1964.

Most of the cases of meningitis at Fort Ord occurred among the basic trainees during their first eight weeks of training. During the peak years of 1963 and 1964, only two cases occurred in men who were members of the regular garrison, and there were no cases among the cadremen who were most intimately associated with the trainees during their basic training. In October, 1964, there were three cases among dependents of military personnel, and one of them died. Other cases occurred among civilians who had indirect contact with the post, but because of the nature of their exposure, and of their numerous opportunities for contact with meningococci elsewhere, they weren't included in the record of cases at Fort Ord. In October, 1964, the admission of new trainees was stopped, and by the end of November all basic trainees had been transferred elsewhere.

In the Fort Ord outbreak, there were several cases of fulminating meningococcemia, with a confluent hemorrhagic rash and shock. Death occurred within a period as short as five hours from the onset of illness. Most of the deaths were in this group of patients with symptoms characteristic of the Waterhouse-Friderichsen syndrome. The hospitalization of patients with the earliest symptoms of illness permitted prompt diagnosis and immediate treatment, and it probably was a factor in the relatively favorable mortality rate at that military installation.

In 1962 there were no fatalities among the 38 meningitis patients at Fort Ord. In 1963 the fatality rate was 8.2 per cent, and in the outbreak of 1964 it rose to 13.3 per cent. These figures contrast markedly with the 19.1 per cent fatality rate for California as a whole for both 1962 and 1963. In 1964, there were 10 military-dependent patients and two of them died, but none of them had had contact with a meningitis patient.

Prior to 1962, Type A meningococcus predominated in both civilian and military outbreaks of the disease. Since 1962, the cause of the infection at Fort Ord has been serotype B in 90 per cent of the cases, and serotype C in 10 per cent. There was the same ratio for the cases in the civilian population of California. Throat-culture surveys in both civilian and military groups also showed a dominance of serotypes B and C.

The most effective treatment for meningitis at Fort Ord during the recent outbreak consisted of the intramuscular administration of two million units of the soluble salt of penicillin G every two to three hours, or a total of approximately 24 million units in 24 hours.

Despite the number of cases of meningitis at Fort Ord, according to Brown and Condit, the outbreak demonstrated that the disease has a low degree of communicability. Ordinarily, the risk of acquiring meningococcal infection is low. When one considers the thousands of contacts on the military post and the many opportunities for transfer of meningococci among individuals, both military and civilian, he realizes that the communicability must have been low. A survey of Monterey County conducted during the period from January to September, 1964, at the height of the outbreak on the post, revealed only one case of meningococcal meningitis in the civilian population. During that same time, 85 per cent of all civilian patients with meningococcal meningitis in California denied having had any contacts with military personnel. The age distribution of the civilian patients in 1964 indicated that children are much more susceptible to the disease than are adults. Through the first nine months of the year, 56 per cent of the total cases were in children four years of age or younger, and 74 per cent were in youngsters under 15 years of age.

Since its introduction to the West Coast in 1941, sulfadiazine has been the treatment of choice for meningococcal meningitis. However in 1962, in an outbreak of the disease at the San Diego Naval Training Center, several strains of meningococci were found to be resistant to sulfadiazine, and since that time numerous resistant strains have been isolated from both civilian and military personnel. In the Fort Ord outbreak the strains of meningococci isolated from clinical cases of meningitis were approximately 50 per cent sulfa-resistant. Fortunately, meningococci have continued sensitive to penicillin, tetracycline, chloramphenicol and most broad-spectrum antibiotics.

Mass prophylaxis with penicillin and the broad-spectrum antibiotics requires full therapeutic dosage and is therefore impractical in controlling an outbreak of the disease. During 1962 and 1963, at Fort Ord, mass prophylaxis was carried out on nine different occasions. In 1962, the case rate diminished afterward, but in 1963 prophylaxis was ineffective and new cases continued to occur. As a consequence, mass prophylaxis by means of sulfadiazine was discontinued in the latter part of June, and it was concluded that sulfadiazine for the prevention of the disease should be restricted to outbreaks in which laboratory studies had established the organism's sensitivity to the drug.

The Committee on Meningococcal Infections of the Armed Forces Epidemiological Board, after a study of the situation at Fort Ord, concluded that no single antimicrobial agent or combination of agents currently available was satisfactory for mass prophylaxis or for the treatment of carriers

Editorials continued...

in outbreaks due to sulfonamide-resistant meningococci. Brown and Condit insist, however, that the continued use of sulfadiazine prophylactically for contacts of sporadic civilian cases of meningococcal meningitis is still rational, since two-thirds of the cases in the California civilian population have continued to be caused by sulfonamide-sensitive organisms.

One of the most startling findings in the study of the outbreak at Fort Ord was the high carrier rate. Several separate studies in which throat cultures were made of young adult males in the civilian population revealed that the carrier rate for meningococci varied from 9 to 25 per cent, and averaged 20 per cent on first culture. These findings are thought to reflect the present carrier rate for the adult male civilian population in California. Among the trainees at Fort Ord, the carrier rate reached 70 to 90 per cent by their eighth week of training. When a series of daily cultures were made, over 90 per cent grew out meningococci one or more times. It was also demonstrated that the carrier state may be transient, in that the culture may be positive one day and negative the next. Surprisingly, no correlation could be shown between the carrier rate and the occurrence of cases of meningitis on the military post.

In 1964 an examination of 91 strains of meningococci from civilian patients with meningitis in all sections of California produced only a single culture of serotype A. Type B was found in 72 cultures (79 per cent), and 62 per cent of those cultures were sensitive to sulfadiazine. In 16 of the cultures, the organism proved to be serotype C, and in 94 per cent of them it was sensitive to sulfadiazine.

Since 1959 there has been a slow but persistent increase in the numbers of cases of meningococcal meningitis in California, from 1.2 per 100,000 people to 2.2 per 100,000 in 1963. During the first 11 months of 1964, the rate increased to 2.7. For the United States as a whole, the rate was 1.1 per 100,000 people in 1963, and 1.2 per 100,000 for the first 10½ months of 1964. Except in New England, there has been a rising incidence of the disease throughout the United States during the past few years.

Numerous precautionary measures were taken to prevent the spread of the meningococcus and to reduce the incidence of meningitis at Fort Ord. The post was closed as of December 1, 1964, and wasn't opened for the admission of trainees or reserve personnel until April, 1965. Trainees may have no visitors other than their parents. Upon completion of training, the trainees are to be transferred immediately to their next duty assignments, without leaves or passes. With the reopening of the post on April 1, all precautionary measures in effect when the admission of trainees was stopped were reinstated. Those precautions included the denial of all passes or leaves during the eight-week period of training, and restriction to the company area and other measures designed to keep close association of trainees to a minimum. Physical-conditioning activities were lessened to prevent the possibility of over-fatigue. Trainees were subject to close surveillance, and upon the slightest symptoms suggestive of illness, they were hospitalized for a minimum of 48 hours' observation.

In discussing their report, Brown and Condit pointed out that the human nasopharynx is the natural habitat for Neisseria meningitidis. Studies now in progress suggest that nearly everyone has the organism in his nasopharynx at one time or another, if not continuously. The organism is very rapidly dispersed throughout a population, whether civilian or military. There probably are several thousand carriers for every case of meningococcal meningitis. None of the lower animals has been shown to be a reservoir or vector in the transmission of the organism, and fomites haven't been found to have any significant role in the spread of the disease.

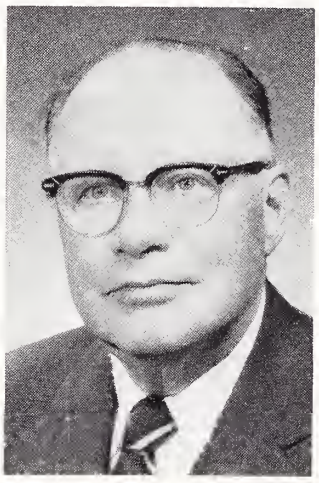
The study demonstrated that about 20 per cent of 17- to 24-year-old male civilians are carriers of Type B meningococci. Thus it is quite impossible, with any certainty, to determine the source of the organism infecting a particular individual. Multiple opportunities for exposure are constantly present, even without exposure to military personnel. The occurrence of the disease in any individual is the result of the failure of the host to resist invasion. The prevailing concept is that meningitis is less likely to develop in a person who harbors the organism in his nasopharynx, but if resistance is acquired in this manner, its duration is unknown.

In an editorial commenting upon Brown and Condit's report, Dr. Edward B. Shaw* points out that when there is almost a constant opportunity for exposure to so ubiquitous a pathogen, special conditions of host-susceptibility may well be the most important cause of the disease. He postulates that the sulfonamide resistance may well be due to the widespread prophylactic use of the drug in a circumscribed population. He emphasizes that two-thirds of the strains found in the civilian population are still sensitive to sulfonamide, and that in the treatment of the disease the drug shouldn't be abandoned. Rather, it should be combined with large doses of penicillin. The indiscriminate use of either penicillin or sulfonamides for prophylaxis may produce further and more serious problems of resistance. He points out that there is a striking resemblance between the problems of infection, of therapy and of antibiotic resistance between the meningococcus and recent problems with the ubiquitous staphylococcus. Moreover, it isn't unreasonable to anticipate similar problems in the future with still other organisms.

---

* Shaw, E. B.: Outbreak of meningitis (Editorial). CALIF. MEDICINE, **102**:234, (Mar.) 1965.

President's Page



Busy people, in their rush to accomplish their missions in life, are likely to postpone counting their blessings. We physicians, I am certain, take our employees too much for granted. These medical assistants are a dedicated group who adjust their lives to the needs of us physicians. Quitting time means little to them, for their purpose in life is to keep their doctors' business running smoothly, and to see to it that the doctors and the doctors' patients are happy.

They are responsible for our patients' first impressions of our offices. Without them, modern medical practice would be very irritating. The interminable paper work wouldn't get done if we physicians had to do it, and that chore will constantly increase as third parties pay the bills in more and more instances.

These women are zealous in their efforts to keep abreast. They devote their annual meetings—such as the one in Mason City last month—to lectures and demonstrations that will enable them to do a better job of helping us physicians with our daily work.

Our hats are off to these girls! May they continue their efforts, and let's be the first to say "A job well done," and to help in perpetuating the Iowa Association of Medical Assistants.

Frank Oberg

President

THE JOURNAL *Book Shelf*

BOOK REVIEWS

HEART ATTACK: NEW HOPE, NEW KNOWLEDGE, NEW LIFE, by *Myron Prinzmetal,* M.D. (New York, Simon & Schuster Pub., 1965, $4.50 cloth, $1.75 paper).

First published in 1958, HEART ATTACK has been revised and updated by Dr. Prinzmetal and Mr. Winter.

This is the type of book the physician can recommend to his coronary patient and be sure that he is providing him with accurate and positive answers in detail.

Dr. Prinzmetal discusses smoking, anticoagulants, exercise, attitudes and diets—with many sample diet recipes and menu suggestions. He even includes a chapter entitled "Sex?—Of course."—*Mark D. Ravreby,* M.D.

SCINTILLATION SCANNING IN CLINICAL MEDICINE, ed. by *James L. Quinn, III,* M.D. (Philadelphia, W. B. Saunders Co., 1964, $11.50).

This is, if not the first, one of the earliest publications that is complete in textbook form, presenting the subject matter of radioactive scanning. The book is organized in a fashion that makes it very useful to the clinician.

The first portion of the book is devoted to fundamental considerations of the physics of scanning and the isotopes that are used in the scans. The remainder of the book is devoted to the application of scanning in various diseases and areas of the body. An excellent presentation of thyroid scanning is given. Some of the very recent developments in scanning are also presented. The last portion is devoted to a look into the future of scanning.

This book would be an excellent addition to the library of anyone who either is doing scanning or is referring patients for scanning studies.—*N. W. Irving, M.D.*

SURGERY OF THE BREAST, by *Louis H. Jorstad,* M.D., F.A.C.S., F.I.C.S. and *Meredith Jorstad Payne,* M.D., F.A.C.S. (St. Louis, C. V. Mosby Co., 1964, $15).

This volume has a very complete table of contents, and an extensive bibliography (14 pages). But it is only fair to warn the reader that for paragraph after paragraph, and page after page, it extracts statistics from the literature almost to the point of confusion, and certainly to the very border of boredom, and it presents similar material from the author's own experience. The following consecutive paragraphs are illustrative of this statistical jumble.

"Simple mastectomy was done in sixty-three patients with fibrocystic disease, and in fifty-three instances it was an initial procedure because of the extensive involvement. In fourteen instances it was done following more than one previous excision of a segment.

"Also in this group were seventeen patients who had a bilateral simple mastectomy. Of the entire group, there were twenty patients who did not have the disease in the opposite breast either at the time of the initial examination or during a follow-up period. There were thirteen patients who developed disease in the other breast subsequently. Two patients treated by radical mastectomy for cystic disease and carcinoma in one breast developed cystic disease in the other breast to the degree that a simple mastectomy was done.

"Of the sixty-three patients who underwent simple mastectomy, twenty-eight were noted to have bilateral disease at the time of initial examination. Fifteen of those who had bilateral disease initially or developed it subsequently were managed satisfactorily without an operative procedure. Nine underwent a simple excision of the local area of disease, and seventeen were treated by simple mastectomy, this latter group being the simple mastectomy group.

"Of thirty-six patients who had undergone a surgical procedure before referral, thirteen responded to the use of a supportive brassiere. There were fifty-seven patients who underwent one or more surgical procedures and then developed recurrent disease which responded to brassiere therapy. There were 281 patients in whom the finding of large, pendulous breasts was noted and twenty-five patients with unusually small breasts.

"Of the specimens removed, 148 were called chronic cystic mastitis, eight were diagnosed as gynecomastia in conjunction with chronic cystic mastitis, and twenty-four were diagnosed as fibrous involution. Fibrocystic changes were predominant in twenty-six specimens, and Schimmelbusch disease was predominant in five cases. In twenty-one cases the disease was confined to the tail of the breast. In a total of 162 patients, one operative procedure was performed, and seventeen of these had been operated on previous to my examination and responded to brassiere therapy.

"In a total of forty patients, single excision of disease in one or both breasts was not sufficient, and in thirty-seven patients a second excision was necessary. Because of the extensive involvement of the disease in fifty-three patients, excision of all of the breast tissue was deemed necessary at the time of the original exploration."

The foregoing example is a lengthy one, but it could be duplicated many times. One can read many pages of the book, with a considerable effort of con-

centration, without finding a conclusion or statement of fact that he can come to grips with or hang on to.

It would be impossible, however, to include such a profusion of reference material without coming up, at times, with examples of concise and positive opinion. Such examples can be found if diligently looked for. There is one chapter, too—entitled "Related changes, diagnostic procedures, and developmental abnormalities as they pertain to cancer of the breast"—which treats of a variety of pertinent subjects briefly and clearly.

The book merits only a lukewarm recommendation. It might be useful as a reference for a detailed review of the literature.—*Daniel F. Crowley,* M.D.

CURRENT THERAPY 1965, ed. by *Howard F. Conn,* M.D. (Philadelphia, W. B. Saunders Co., 1965, $13).

The seventeenth edition of this annual reference volume on treatment methods continues to hew to the line of practicality. The subtleties of diagnostic dialectics are not the concern of this text. For each of the disease conditions discussed, an experienced practitioner outlines his method of treatment; drugs are named, doses are given.

A number of Iowa physicians are among the contributors: Drs. Henry Hamilton on Amebiasis; Ian Smith and Sergio Rabinovich on Endocarditis; William Connor on Vitamin K Deficiency; J. A. Buckwalter on Hyperthyroidism; Paul Seebohm on Bronchial Asthma; and R. A. Dorner on Carcinoma of the Lung.

This is a handy and useful compendium for the practitioner, particularly if he remembers that the therapeutic regimens outlined represent highly individual experiences and opinions. Most American physicians, for example, will be a little shaken on reading, in the chapter on Typhoid Fever by Dr. R. T. L. Pang of Djakarta, Indonesia, that "The value of vaccination is uncertain and vaccinated persons may have a false sense of security. It is better to rely on hygienic measures to avoid infection."

It is one of the ironies of medical practice that, while this book treats of almost everything from brain tumor to bed sores, this reviewer, on turning to it for the first time, came away empty-handed. No chapter on hiccough.

Nor singultus.—*Herman J. Smith,* M.D.

BOOKS RECEIVED

PREVENTIVE MEDICINE, Principles of Prevention in the Occurrence and Progression of Disease, ed. by *Herman E. Hilleboe,* M.D. and *Granville W. Larimore,* M.D. (Philadelphia, W. B. Saunders Co., 1965, $12).

MODERN TREATMENT, Vol. 2, No. 1, Treatment of Stroke, by *Fletcher H. McDowell,* M.D. and Treatment of Menstrual Disorders, by *Jay J. Gold,* M.D. (New York, Hoeber Medical Division, Harper & Row Publishers, Inc., 1965, $16).

CELLULAR BIOLOGY OF MYXOVIRUS INFECTIONS, ed. by *G. E. W. Wolstenholme,* O.B.E., M.A., M.B., F.R.C.P. and *Julie Knight,* B.A. (Boston, Little, Brown & Co., 1965, $12).

TRAUMA TO THE LIVER, by *Gordon F. Madding,* M.D., M.S. (Surgery), F.A.C.S. and *Paul A. Kennedy,* M.D. F.A.C.S. (Philadelphia, W. B. Saunders Co., 1965, $6).

THE ADVANCE OF THE FUNGI, by *E. C. Large* (New York, Dover Publications, Inc., 1962, $2.25).

ANIMALS PARASITIC IN MAN, by *Geoffrey Lapage* (New York, Dover Publications, Inc., 1963, $1.85).

A SYNOPSIS OF CONTEMPORARY PSYCHIATRY, 3rd Edition, by *George A. Ulett,* B.A., M.S., M.D., Ph.D., and *D. Wells Goodrich,* M.D. (St. Louis, C. V. Mosby Co., 1965, $6.75).

MANAGEMENT OF THE PATIENT WITH SUBNORMAL VISION, by *Gerald Fonda,* M.D., F.A.C.S. (St. Louis, C. V. Mosby Co., 1965, $11).

CARDIOMYOPATHIES, CIBA Foundation Symposium, ed. by *G. E. W. Wolstenholme,* O.B.E., M.A., M.B., F.R.C.P., and *Maeve O'Connor,* B. A. (Boston, Little, Brown &. Co., 1964, $12.50).

COMPARATIVE BIOCHEMISTRY OF ARGININE AND DERIVATIVES, CIBA Foundation Symposium, ed. by *G. E. W. Wolstenholme,* O.B.E., M.A., M.B., F.R.C.P. and *Margaret P. Cameron,* M.A. (Boston, Little, Brown & Co., 1965, $2.95).

SURGERY OF THE BILIARY PASSAGES AND THE PANCREAS, by *Walter Hess,* M.D. (Princeton, N. J., D. Van Nostrand Co., Inc., 1965, $25).

AMA Convention Program

What is expected to be the largest American Medical Association convention in history will be June 20-24 in New York City. The program is outlined in a special section of the May 10 JOURNAL OF THE AMA.

An attendance of 69,500, including 25,000 physicians, is expected. The largest previous AMA convention was in 1961, in New York City, when 64,679 attended, including 23,083 physicians.

James Z. Appel, M.D., Lancaster, Pa., will be installed as AMA president. He succeeds Donovan F. Ward, M.D., of Dubuque, Iowa. Six general scientific sessions will be coordinated by secretaries of various AMA specialty sections. Topics include hearing, adverse reactions, non-narcotic drug addiction, metabolism in growth development and aging, diagnostic cytology, and organ transplantation.

Another highlight will be the fifth Multiple Discipline Research Forum, presented this year as a program of the AMA Section on Experimental Medicine and Therapeutics. AMA's other scientific sections also will present programs for physicians in their specialties.

The more than 350 scientific exhibits will be housed in the New York Coliseum. The Coliseum also will be the site of many scientific sessions and an extensive medical motion picture and television program.

The AMA's policy-making House of Delegates will meet in the Americana Hotel. Speaker of the House of Delegates is Milford O. Rouse, M.D., of Dallas, Texas. Walter C. Bornemeir, M.D., Chicago, is vice-speaker.

Iowa Chapter of the American Academy of General Practice

Renewed Vitality Evident at San Francisco AAGP Convention

Sparked by a substantial gain in physician attendance, the Academy's Seventeenth Annual Convention opened on a peak of enthusiasm that was sustained throughout the five-day medical meeting in San Francisco's Civic Auditorium.

Even before scientific sessions convened, a renewed vigor prevailed as the delegates to the Academy's policy-making Congress endorsed a certifying board for general practice and authorized the Board of Directors to take initial steps towards its creation.

Dr. Amos Johnson, of Garland, N. C., assumed the office of president. Dr. Carroll Witten, Louisville, Ky., was elected president-elect; Dr. Francis Land, Fort Wayne, Ind., vice-president; John Ely, M.D., Spokane, Wash., speaker; and William Hagood, M.D., Clover, Va., vice-speaker. Elected to the Board of Directors were Drs. Richard Bellaire, Saranac Lake, N. Y., Antonio Franzi, San Francisco, Calif., and Theodore Nereim, Madison, Wis.

Thirty-five members from Iowa attended, and an Iowa dinner was held during the Convention at which 48 persons were present.

At the close of the Scientific Assembly on Friday, final physician registration stood at 2,886, an increase of 1,032 over the 1964 attendance figures in Atlantic City. Total registration reflected a similar gain at 6,489 compared to 4,470 last year. At the last Academy convention in San Francisco, held in 1959, total attendance figures were 6,143, including 3,059 physicians.

3-YEAR COMPARISON OF REGISTRATION FIGURES

	San Francisco 1965	Atlantic City 1964	Chicago 1963
Physicians	2,886	1,854	3,011
Scientific Exhibitors	122	142	146
Technical Exhibitors	1,168	1,146	1,474
Guests	2,313	1,328	2,339
Total	6,489	4,470	6,970

Untoward Reactions to Drugs Used in Initial Chemotherapy of Cavitary Tuberculosis*

A Statement by the Committee on Therapy of the American Thoracic Society

Whereas it is possible to achieve a consistent state of noninfectiousness in 97 per cent or more of patients with cavitary and far-advanced tuberculosis who have completed six months of antituberculosis therapy in initial treatment,[1-4] this high degree of success is not generally achieved. The original treatment regimens that are most successful for cavitary tuberculosis are: regimens employing isoniazid and daily streptomycin with[2-4] or without[1] para-aminosalicylic acid; and regimens employing alternating pairs of agents, periods of daily streptomycin and pyrazinamide alternating with periods of isoniazid and para-aminosalicylic acid.[5] A factor common to these regimens is the use of daily streptomycin either in combination with, or alternating with, isoniazid.

It has been common practice to employ a less optimal regimen in far-advanced and cavitary tuberculosis, namely, isoniazid and para-aminosalicylic acid. It does not seem justified in this country, however, to withhold daily streptomycin during the first weeks of therapy on the ground that hospitalization usually will be required or that there is greater inconvenience or cost. The central problem that must be met in relation to employment of maximal regimens is the physician's concern about the greater incidence of toxic reactions. It is recognized that a wide range of untoward reactions to modern drugs does occur; these represent "the price that must be paid for therapeutic progress."[6] It is the purpose of this statement to offer guidelines on the recognition and management of these untoward reactions so as to avoid paying too high a price.

UNTOWARD REACTIONS TO ANTITUBERCULOSIS AGENTS IN GENERAL

Untoward reactions to antituberculosis agents include (1) true toxic effects, (2) hypersensitivity reactions, and (3) side-effects.

True toxic reactions are effects on the function

* Reprinted from AMER. REV. RESP. DIS., 91:293-296, (Feb.) 1965.

or structure of a specific organ and are dose-related. These may be avoided by selection of a dose proper to the age and condition of the patient. If a toxic reaction occurs, the drug or agent must be discontinued. However, after clinical and laboratory signs have subsided, it is frequently possible to resume the medication in lower doses, either alone or accompanied by another agent that is capable of preventing or neutralizing the toxic effects of the drug.

Hypersensitivity reactions are immunologic reactions in which the drug acts in some manner as antigen in an antigen-antibody reaction. Clinically, they are characterized by their unpredictability, by a latent period before manifestations appear, and by the lack of relation to dose. Once hypersensitivity is established, even small amounts of the agent may reproduce or perpetuate the reaction. These reactions vary considerably in severity and in seriousness from a mild erythema or pruritic skin rash to exfoliative dermatitis; from asymptomatic eosinophilia to severe and generalized hypersensitivity manifested by fever, lymphadenopathy, rash, liver function abnormality by laboratory test, or, in more severe cases, by jaundice and death. Anaphylactic reactions have also been seen in cases of established hypersensitivity when challenged by the offending agent.

Milder forms of hypersensitivity are not absolute contraindications to the use of a drug, as it is frequently possible to desensitize by using appropriate measures.

Side-effects are disagreeable symptoms which are generally not serious or progressive and which are not manifestations of organ damage or hypersensitivity. Chief examples of these effects are the anorexia and gastrointestinal symptoms of sensitivity to para-aminosalicylic acid and ethionamide. These are usually dose-related and frequently can be managed by reassurance of the patient, reduction in dose, or temporary interruption of therapy with the drug. Side-effects may be so uncomfortable, however, that patients may refuse to continue the medication.

UNTOWARD REACTIONS SPECIFIC TO STREPTOMYCIN AND THEIR MANAGEMENT

1. *Toxic Effects.* The streptomycin series of antimicrobial agents are strongly basic amine compounds that exert a peculiar toxic effect on the sensitive cells of the vestibular and cochlear end organs and on the kidney. The principal concern about toxicity in original treatment regimens revolves about the use of streptomycin in doses of 0.5 to 1.0 Gm. daily for six to 12 weeks.

(a) *Vestibular and cochlear effects:* With the use of streptomycin, subjective signs of vestibular dysfunction (dizziness and vertigo) and unsteadiness of gait appear before any cochlear effects are detectable. Dizziness or vertigo occurring in any patient receiving streptomycin (particularly *daily* streptomycin as part of initial therapy) should be regarded as evidence of vestibular toxicity. Streptomycin should be discontinued until these symptoms disappear; the drug can then usually be resumed in a lower dose under close observation without any significant risk.

Diminished renal function is linked to vestibular and cochlear toxicity; following intramuscular injection, high concentrations of streptomycin persist in the serum of patients with impaired renal function. When evidence of impaired renal function exists, the dose of streptomycin (particularly daily streptomycin) should be reduced. Studies of auditory function (audiometry) should be performed, especially if hearing loss already exists or if tinnitus develops.

Age and weight are important considerations in selecting the dose of daily streptomycin in initial treatment: generally the dose of streptomycin should be 15 to 20 mg. per kilogram per day, not to exceed 1.0 Gm. per day. However, this dose should be modified for patients above the age of 50, for whom doses exceeding 0.5 Gm. of streptomycin per day should be used with special care. If these considerations of renal disease, body weight, and age are borne in mind, and if the drug is discontinued with onset of dizziness, serious toxic effects of streptomycin will be minimized. Continuation of streptomycin in the face of vestibular effects may be considered in unusually serious situations such as tuberculous meningitis. The duration of daily streptomycin should be limited to the first six to 12 weeks of therapy, and the drug should be discontinued sooner if toxic reactions occur.

(b) *Effects on the kidney:* Antimicrobials derived from Streptomyces also have a toxic potential for the kidney. Albuminuria and casts in the urinary sediment may appear while patients are receiving these compounds, and usually disappear when the drugs are discontinued. Albuminuria and casts, of themselves, do not mean that administration of the drugs must be stopped, as these effects are apparently reversible. In cases in which renal disease is known to exist prior to therapy, however, the risks of administration of Streptomyces antimicrobials are considerably increased. Even when allowances are made for known renal disease by using reduced doses, nitrogen retention may occur. When rising blood urea nitrogen and creatinine are observed, the drug must be discontinued.

2. *Hypersensitivity Reactions.* Skin rash as a manifestation of hypersensitivity to streptomycin occurs in approximately 2 to 5 per cent of cases; fever frequently accompanies rash, but may occur alone.

3. *Side-Effects.* Circumoral paresthesia and drowsiness are minor side-effects of streptomycin, but are not indications for cessation of streptomycin.

UNTOWARD REACTIONS TO ISONIAZID AND THEIR MANAGEMENT

Isoniazid has a high degree of effectiveness and is virtually free from untoward reactions when administered in conventional doses of 5 mg. per kilogram per day. Experience with the use of isoniazid in higher doses has demonstrated, however, that isoniazid, too, may cause untoward reactions, some of which may even be seen at 5 mg. per kilogram per day.

1. *Toxic Effects.*

(a) *Peripheral neuritis:* Peripheral neuritis results from the ability of isoniazid to produce a pyridoxine deficiency in man. This is most often seen in the presence of malnutrition. Paresthesias in the feet and hands usually precede objective sensory and motor deficits. Peripheral neuropathy is dose-related: although rare at 5 mg. per kilogram per day, it occurs in as many as 40 per cent of adults who receive 20 mg. per kilogram per day. Pyridoxine in doses of 50 mg. per day will prevent peripheral neuropathy in patients receiving the higher doses of isoniazid. It is unnecessary to administer pyridoxine with a dose of isoniazid of 5 mg. per kilogram per day unless malnutrition is present. Should symptoms or signs of peripheral neuropathy appear, isoniazid should be discontinued or reduced, and pyridoxine in doses of 50 to 400 mg. per day should be given. When symptoms have subsided, the original dose of isoniazid may be resumed and pyridoxine should be continued. Higher doses of isoniazid may be given to infants and children without toxic effects.

(b) *Toxic psychosis:* Mild cerebral effects, such as slight euphoria, elevation of mood, and, occasionally, impairment of judgment and memory, are reported by certain perceptive patients during isoniazid therapy. Toxic psychosis, however, is a very rare manifestation of isoniazid toxicity. Pyridoxine does not prevent its appearance. Persons who manifest toxic psychosis when receiving high doses of isoniazid may tolerate the drug in lower doses.

(c) *Optic neuritis:* A few cases of optic neuritis have been reported in patients receiving high doses of isoniazid.

(d) *Other toxic effects:* Convulsions, coma and jaundice have been reported in patients taking massive doses of isoniazid, either in suicidal attempts or in accidental overdosage, and have been reported particularly in children. Because of its potential for a direct hepatotoxic effect, it is recommended that isoniazid be used with extreme caution in jaundiced patients.

2. *Hypersensitivity Reactions.* Generalized hypersensitivity reactions to isoniazid similar to those produced by para-aminosalicylic acid, manifested by fever, rash, liver function abnormality, and even jaundice, have been reported. However, these reactions are rare with isoniazid alone. More frequently, isoniazid hypersensitivity, when it does occur, appears jointly with that produced by para-aminosalicylic acid. In these situations, the hypersensitivity appears when patients have been receiving both isoniazid and para-aminosalicylic acid, and manifestations of hypersensitivity may appear on challenge with either agent.

UNTOWARD REACTIONS TO PARA-AMINOSALICYLIC ACID AND THEIR MANAGEMENT

The principal untoward reactions to para-aminosalicylic acid lie in the realm of hypersensitivity and side-effects.

1. *Hypersensitivity Reactions.* Fever, malaise and rash occurring during the first three months of combined chemotherapy are most often due to hypersensitivity to para-aminosalicylic acid. Hepatic reactions with jaundice are serious manifestations of this hypersensitivity, but these reactions can usually be avoided if para-aminosalicylic acid is discontinued promptly after the appearance of fever or other premonitory symptoms.

2. *Side-Effects.* Gastrointestinal side-effects (anorexia, nausea, upper abdominal distress) are problems in 10 to 20 per cent of persons taking para-aminosalicylic acid in a dose of 12.0 Gm. per day. Diarrhea and occasional hypokalemia are more severe side-effects, but are much less frequent. Interruption of therapy, reduction in dose, change to another form of para-aminosalicylic acid, or administration of the total daily dose at one time may help the patient accept the medication. Side-effects of para-aminosalicylic acid may be so uncomfortable, however, that some patients will refuse to continue it in any form.

UNTOWARD REACTIONS TO PYRAZINAMIDE AND THEIR MANAGEMENT

Pyrazinamide is included because of its potential importance as a companion drug to daily streptomycin in an alternating initial therapy regimen. When pyrazinamide is used in dosages of 40 mg. per kilogram of body weight for four weeks, serious untoward reactions are seldom encountered.

The principal untoward effect of pyrazinamide is a hepatic reaction of the cincophen type. This has been arbitrarily called a "hypersensitivity" phenomenon because the hepatic reaction unpredictably appears in a small percentage of persons receiving the drug following a variable latent period. The response also resembles a true toxic reaction with rather specific effects on one organ, the liver, and with some features of relation to dose. The reaction to pyrazinamide may vary from a symptomless abnormality of hepatic cell function, detectable only by laboratory methods, through a mild syndrome of fever, anorexia, malaise and abdominal discomfort, to more serious hepatic reactions such as clinical jaundice, and—in rare cases—progressive fulminating acute yellow atrophy and death. The serum glutamic oxalacetic transaminase (SGOT) should be determined

at two-week intervals. Any patient receiving pyrazinamide who manifests fever, malaise or anorexia, and who manifests an elevation in the level of SGOT above normal levels should have therapy interrupted. The SGOT should be repeated and, if the elevation is confirmed, pyrazinamide should be discontinued. If the tests confirm a hepatocellular abnormality, the drug should not be resumed. An elevation of blood uric acid related to pyrazinamide therapy is common, but is not an indication for discontinuing the drug. However, the hyperuricemia rarely may be accompanied by an acute gouty arthritis which requires discontinuance of pyrazinamide.

RAYMOND F. CORPE
STEFAN GRZYBOWSKI
FRANK M. MACDONALD
MELVIN M. NEWMAN
ALBERT H. NIDEN
AVRUM B. ORGANICK
WILLIAM LESTER, *Chairman*

REFERENCES

1. Russell, W. F., Jr., Kass, I., Heaton, A. D., Dressler, S. H., and Middlebrook, G.: Combined drug treatment of tuberculosis: III. Clinical application of the principles of appropriate and adequate chemotherapy to treatment of pulmonary tuberculosis. J. Clin. Invest., 1959, **38**:1366.
2. Research Committee of the Tuberculosis Society of Scotland: Prednisolone in treatment of pulmonary tuberculosis: A controlled trial. Brit. Med. J., 1960, **2**:1751.
3. Medical Research Council, Tuberculosis Chemotherapy Trials Committee: Long-term chemotherapy in the treatment of chronic pulmonary tuberculosis with cavitation. Tubercle, 1962, **43**:201.
4. International Union against Tuberculosis: Report to the International Tuberculosis Conference. Rome, September, 1963.
5. United States Public Health Service: Sequential use of paired combinations of isoniazid, streptomycin, para-aminosalicylic acid and pyrazinamide. Amer. Rev. Resp. Dis., 1959, **80**:627.
6. Lasagna, L.: The Diseases Drugs Cause, Perspectives in Biology and Medicine, Vol. 7, No. 4, University of Chicago, 1964, pp. 457-470. (Originally a lecture in the Kaiser Foundation Hospital-Permanente Medical Group Symposium "Man Against Himself," San Francisco, October 18-19, 1963.)

Preventive Treatment in Tuberculosis*

A Statement by the Committee on Therapy of the American Thoracic Society

Preventive treatment ("disease prophylaxis," "secondary chemophophylaxis") of tuberculosis can be defined as an attempt to reduce the risk of the development of active disease in persons infected with tubercle bacilli by the administration of specific antituberculosis drugs. Preventive treatment should be distinguished from the situation in which antituberculosis drugs are administered to tuberculin-negative persons unavoidably exposed to a known potent source of tuberculous infection —"primary chemoprophylaxis" or "infection prophylaxis."

Although the value of antituberculosis drugs in the treatment of active tuberculosis is both well established and well documented, many aspects of their use in prevention are still under study. The value of treatment of active disease can be measured by improvement in the clinical state, reversal of infectiousness, and roentgenographic clearing with cavity closure. The value of preventive treatment can be measured only by its effect on the development of active disease among those at risk. This, in turn, requires long-term studies on large numbers of persons liable to develop active tuberculosis. The United States Public Health Service has already completed some studies in this field and initiated a number of others.[1-4]

All those infected with tubercle bacilli (positive reactors to skin tests, using 5 TU of PPD) are under some risk of developing active tuberculosis. In the majority, that risk is too small to warrant prolonged administration of antituberculosis drugs. But certain groups carrying an excess risk that warrants preventive treatment can be delineated. Among such high-risk groups are:

1. *Persons with Apparently "Healed" Tuberculosis.* Reactivation of inactive "reinfection type" tuberculosis is common and contributes as much as one-third of the total active cases in many parts of North America. The risk varies from one group to another:

(a) The risk is highest in those who, while superficially fulfilling the criteria of inactive status, show slight progressive roentgenographic changes, frequently not perceptible in consecutive annual films, but obvious when those obtained at longer intervals are compared serially. Adequate chemotherapy should invariably be given to these persons.

(b) Persons with a prolonged history of tuberculosis at two or more sites, who have never been treated adequately with antituberculosis drugs have a high risk of reactivation.

(c) Persons who previously had an episode of recognized active tuberculosis which became "inactive" without adequate chemotherapy, suffer a continuous risk of reactivation. It is highest in the first few years after reaching "inactive" status, but remains appreciable for many years. Thus, patients treated some 15 or 20 years ago, when no antituberculosis drugs were available, have a greater risk of reactivation today than have patients adequately treated with antituberculosis drugs much more recently. The value of preventive treatment in this large group of cases still awaits elucidation. As this group constitutes a major, easily identifiable reservoir of tuberculous infections in the community, the preventive chemotherapy of these patients may have a great impact on the over-all tuberculosis situation.

(d) Persons without any history of active disease, whose abnormalities, shown roentgenologically, suggest inactive tuberculosis of "reinfection type" have less—but still an appreciable—risk of reactivation. Some of them may be examples of healed nontuberculous disease, e.g., histoplasmosis.

2. *Tuberculin Converters and Tuberculin-posi-*

* Reprinted from AMER. REV. RESP. DIS., **91**:297-298, (Feb.) 1965.

tive Persons. Primary tuberculous infection is particularly dangerous in infancy, when it is liable to progress to meningeal and miliary tuberculosis. It is also dangerous in adolescents and young adults, in whom it is particularly liable to be followed by pulmonary tuberculosis.

In children between the age of four and puberty, the risks attending primary infection are fewer, but are nevertheless significant. Very little is known about the dangers of primary infection in persons beyond the age of 25, although such infections must occur fairly commonly in North America. The greatest risk accompanying primary infection lies within the first 12 to 18 months; later, the risk drops very materially but does not disappear.

Although almost every primary infection is accompanied by "conversion" of the tuberculin reaction from negative to positive, not every tuberculin "conversion" signifies primary tuberculous infection. In some instances, tuberculin "conversion" is due to infection with atypical mycobacteria; in others, it is simply an expression of the waxing and waning of tuberculin sensitivity in an individual infected by M. tuberculosis.

Tuberculin reactions greater than 10 mm. in diameter are more likely to indicate sensitivity induced by tubercle bacilli than by atypical mycobacteria; moreover, large reactions have been repeatedly shown to indicate a higher risk of development of clinical tuberculosis than do small reactions.[2, 5]

Converters among contacts of active cases of tuberculosis have a greater risk of developing tuberculous disease than do converters without such a history of exposure. All of the above considerations have to be taken into account in reaching a decision regarding preventive treatment in the individual, as well as in the formulation of a general plan of the management of tuberculin converters and other tuberculin reactors. Among them the following appear to be the order of priorities for preventive treatment:

(a) Tuberculin-positive children under the age of three.

(b) Recently infected adolescents whose tuberculin reaction has become positive within the previous one or two years.

(c) Recent converters in other age groups, particularly if there is evidence of exposure to an infectious case of tuberculosis, or if they show a large tuberculin reaction.

3. *Other Indications.* There are a number of conditions which predispose infected persons to the development of tuberculous disease and warrant consideration for preventive treatment:

(a) *Silicosis:* Tuberculosis is such a frequent complication of silicosis that probably all tuberculin-positive silicotics should receive preventive treatment with antituberculosis drugs.

(b) Positive tuberculin reactors who are receiving prolonged corticosteroid treatment, are suffering from severe diabetes, or have undergone, or are shortly to undergo, gastric resection, particularly those with large reactions and those with roentgenologic abnormalities possibly representing healed tuberculosis.

(c) Pregnant women with inactive tuberculosis. Therapy may be started in the last trimester and continued for several months after delivery.

(d) Tuberculin-positive children with mild or vaccination-induced measles and whooping cough.

(e) Patients with a positive tuberculin reaction presenting with an undiagnosed lung lesion in whom thoracotomy is otherwise contraindicated.

CHOICE OF DRUGS, DOSAGE AND DURATION OF PREVENTIVE TREATMENT

Isoniazid has been proved to be an effective agent for preventive treatment in tuberculosis; it is relatively free from side-effects, and is cheap. Isoniazid should be given in the dosage of 5 mg. per kilogram per day, usually for 12 to 18 months. In certain self-limited situations, such as pregnancy or in children with measles, the duration may be considerably reduced; but in some instances, much longer administration of isoniazid is indicated. There is a possibility that administration of isoniazid alone to an individual with tuberculous infection may lead to the emergence of isoniazid-resistant tubercle bacilli in that individual. In some instances, such as the prophylaxis in untreated or inadequately treated cases which are now inactive, a trial of a two-drug regimen with PAS and isoniazid might constitute the best initial treatment; if there are any signs of intolerance to PAS, such a regimen can always be changed to the use of isoniazid alone.

Although only further studies will establish the precise value of, and the specific indications for, preventive treatment, available evidence suggests a useful role for preventive chemotherapy in overall tuberculosis control.

RAYMOND F. CORPE
STEFAN GRZYBOWSKI
FRANK M. MACDONALD
MELVIN M. NEWMAN
ALBERT H. NIDEN
AVRUM B. ORGANICK
WILLIAM LESTER, *Chairman*

REFERENCES

1. Mount, F. W., and Ferebee, S.: II. Preventive effects of isoniazid in the treatment of primary tuberculosis in children. New England J. Med., 1961, **265**:713.
2. Ferebee, S. H., and Mount, F. W.: Tuberculosis morbidity in a controlled trial of the prophylactic use of isoniazid among household contacts. Amer. Rev. Resp. Dis., 1962, **85**:490.
3. Livesay, V. T.: A controlled trial of isoniazid prophylaxis in mental institutions. Amer. Rev. Resp. Dis., 1963, **88**:161.
4. Comstock, G. W.: Untreated inactive pulmonary tuberculosis: Risk of reactivation. Public Health Rep., 1962, **77**:461.
5. Medical Research Council of Great Britain: BCG and vole bacillus vaccines in the prevention of tuberculosis in adolescence and early adult life. British Med. J., 1963, **1**:973.

Coming Meetings

IN STATE

June 7-11	**Basic Principles of Internal Medicine, American College of Physicians,** U. of I. College of Medicine, Iowa City.
June 10	**Fourth Annual General Practice Seminar for Northeastern Iowa Physicians,** Mental Health Institute, Independence.
June 10-12	**Spring Postgraduate Conference, Iowa Chapter, American Academy of General Practice,** New Inn, Lake Okoboji
June 12	**Symposium on Recent Advances in Diagnosis and Treatment of Cancer,** Iowa Lutheran Hospital, Des Moines.

CONTINENTAL U. S.

June 7-18	**Neuromuscular Diseases of Children with Special Emphasis on Management,** Cook County Graduate School of Medicine, Chicago.
June 8-11	**Golden Jubilee, Catholic Hospital Association Convention,** Kiel Auditorium, St. Louis, Mo.
June 9-11	**The Hemodynamic Basis for Auscultation, American College of Physicians,** New York University Medical Center, New York City.
June 13-15	**Religion and Medicine Conference,** University of Colorado School of Medicine, Estes Park, Colorado.
June 14-17	**64th Annual Meeting of the American Proctologic Society,** Hotel Leamington, Minneapolis.
June 14-18	**Hematology for Internists, in the Light of Recent Developments, American College of Physicians,** University of Rochester School of Medicine, Rochester, New York.
June 16	**1965 Scientific Session of the American Cancer Society,** Drake Hotel, Philadelphia.
June 20	**Seventh Annual AMA-ASHA Preconvention Session on School Health,** New York City.
June 20-24	**AMA 114th Annual Convention,** New York City.
June 27-July 2	**American Physical Therapy Association 42nd Annual Conference,** Sheraton-Cleveland Hotel, Cleveland, Ohio.
July 5-8	**Ophthalmology,** University of Colorado School of Medicine, Estes Park, Colorado.
July 16-17	**19th Annual Rocky Mountain Cancer Conference,** Brown Palace Hotel, Mile High City, Denver.
July 18-24	**11th Annual General Practice Review,** University of Colorado School of Medicine, Denver.
July 19-Aug. 20	**Second Course in Hospital Engineering Problems,** University of Minnesota, Minneapolis.
July 26-30	**Interpretation and Therapy of Cardiac Arrhythmias,** Hahnemann Medical College and Hospital, Cardiovascular Institute, Philadelphia.

ABROAD

June 16-19	**International College of Surgeons European Federation Congress,** Helsinki, Finland.
June 30-July 5	**International College of Surgeons New England and East Canadian Region Meeting,** Mont Gabriel, Quebec, Canada.
July 22-24	**International College of Surgeons Guanabara Division Meeting,** Rio de Janeiro, Brazil.
July 28-31	**Second International Congress of Psychosomatic Medicine in Obstetrics and Gynecology,** Vienna, Austria.
Aug. 4-15	**American Physicians Fellowship Orthopedic Seminar,** Israel Medical Association, Israel.
Aug. 8-14	**Eighth International Anatomical Congress,** Wiesbaden, Germany.
Aug. 20-25	**Ninth International Congress on Diseases of the Chest,** Council on International Affairs of the American College of Chest Physicians, Copenhagen, Denmark.
Sept. 5-10	**International League Against Epilepsy**—Quadriennial Meeting, Vienna, Australia.
Sept. 5-10	**Sixth International Congress of Electroencephalography and Clinical Neurophysiology,** Vienna, Austria.
Sept. 5-10	**Eighth International Congress of Neurology,** Vienna, Austria.
Sept. 16-19	**Seventh International Congress of General Practice,** Salzburg, Austria.
Sept. 19-24	**World Medical Association 19th Annual Assembly,** London.
Sept. 22-28	**Eleventh International Congress of Radiology,** Rome, Italy.

Improved Physical Education Needed

Exercises can do more than merely build muscles. The right kinds of exercises and games can help a child gain confidence, improve his coordination and create an interest in vigorous activity that he can carry into adult life. They can also help to control obesity, delay degenerative disease, aid rehabilitation after illness or injury, and shorten recuperative periods. These are the reasons why schools and colleges should offer a variety of activities in physical-education programs, says the AMA Committee on Exercise and Physical Fitness.

The newly-formed Committee, in the first of a series of reports on the value of physical activity and properly developed physical-education programs, has declared: "Students of both sexes need vigorous exercise. Regular, vigorous activity appropriate to age, sex and health status is beneficial to everyone but a medically-excepted few."

Even the handicapped can benefit from exercise, the Committee says. Handicapped children should be encouraged to participate in games and exercises to the limit of their ability. "The development of emotional maturity can be aided by comprehensive physical-education programs. Sports activities can help fill a child's apparent need for adventure, train him to meet and accept challenges, teach him to accept limitations, and increase his self-esteem. As they gain skill and improve in fitness, boys and girls will want to test themselves under increasingly difficult competition."

There are some problems, however. In some situations, the Committee says, varsity sports programs are given priority in attention and resources over intramural and physical-education programs. "This should not be the case," says the report. "Each is an important part of the program and should share equitably in facilities and teaching personnel."

Each school is responsible for teaching the value and appreciation of physical fitness, the Committee says. Decreases in behavioral problems and increases in intellectual efficiency can be expected if the school's physical-education program is a good one.

Iowa Association of Medical Assistants

Effective Use of the Telephone

Many of you have had the good fortune to hear representatives of the Northwestern Bell Telephone Company speak about good and not-so-good telephone technics, and in previous issues of the JOURNAL you may recall having read some of my remarks on the subject. But the telephone is, perhaps, the medical assistant's most valuable tool, and thus promptness and courtesy in answering calls, and the value of using "a voice with a smile" can't be mentioned too often. A medical assistant's telephone personality reflects upon her employer, and it is up to her whether that reflection is a favorable or an unfavorable one.

Let's go back to fundamentals. In answering the phone, you should first identify your office, and then—if your employer wishes you to do so—you may identify yourself. Many assistants answer: "Skyview Clinic; this is Miss Smith." Others say just, "Drs. Jones and Jones." Then, if the caller fails to identify himself, you should ask who is calling.

If your doctor isn't in and you are to take a message for him, tell the caller when you expect him to return, or if he has been called to the delivery room or is in surgery, the approximate time when he will return. If the caller wishes to leave a message, be sure to write it down, and then be certain to repeat it so as to make sure that you have written it correctly. If the doctor will have occasion to phone the patient, take down the number that he is to call, and repeat it for verification. Then be sure the doctor receives the message.

Perhaps the caller wants to make an appointment. Unless the patient is known to you, and your files contain his full name, address and telephone number, be sure to ask for those pieces of information. Then, ask the caller's reason for seeking an appointment. In asking this, you aren't being nosey, for you need to know how much time to allow him on the doctor's schedule, and how urgent the prospective patient's difficulties are.

When you have given the caller an appointment, it's a good idea to ask whether the phone number that you have for him is one through which he can be reached at any time. If, for any reason, it becomes necessary to change the time for his appointment and you can reach him by phone, you can save him a fruitless trip to the doctor's office.

If the caller wants the doctor to make a house call, it's necessary for you to have all of the above information, plus travel directions if the area isn't one with which the doctor is familiar. If the district is rural, ask the caller to be specific about landmarks, whether the house will be on the doctor's left- or right-hand-side, how many houses it is from the last intersection, etc., plus the speedometer distance from a stated point.

* * *

To save yourself time, do you have a current list of most-often-used numbers near the telephone for ready reference?

Be sure you have ready answers to standard questions. For example, be ready to say which bus stops nearest to your office, and to give directions for an out-of-town patient to use in reaching your office. Then there are questions—no less frequent ones—that you must answer in accord with your doctor's instructions. He can tell you what answers should be given to people who ask to be told his charges in advance, and he can tell you what laboratory reports he wishes you to relay, and which ones he prefers to give, himself.

There are many calls which a medical assistant can take care of without channeling them through her doctor. If he is attending a patient, he prefers not to be interrupted unless the call is really urgent. You might answer the call by saying, "Dr. Jones is with a patient. May I take the message?"

* * *

Sometimes when a patient wishes to make an appointment, he prefers to talk with the doctor because his difficulty is of a sort that he is willing to discuss only with him. The patient is entitled to the privacy that he seeks, even though it might seem to one of us that his desire for secrecy is scarcely justified.

Make sure that your telephone is so situated that conversations can't be overheard; that you answer promptly and pleasantly, in a well modulated voice; that your note pad and pencil are handy for use; and that you thank the caller before terminating the conversation—allowing him to hang up first.

Be sure your best foot is forward, rather than in your mouth!

—HELEN G. HUGHES

Physicians Want to Help Their Patients Individually to Maintain

Adequate Immunizations

With unprecedented frequency, during recent months, the JOURNAL has stressed the need for a concerted effort by physicians and patients at maintaining a high level of preventive medicine. The January, 1965, issue contained a report on shortcomings in the immunization status of children attending the demonstration school at the University of Iowa, in Iowa City. It showed that the parents of elementary pupils there—though presumably they constitute an enlightened group—had failed to keep their youngsters' protection current. The April, 1965, issue contained a report from the American Cancer Society, Iowa Division, Inc. on Iowa deaths from carcinoma of the cervix, a disease that should never be permitted to progress from the *in situ* stage. In the current issue of the JOURNAL (pp. 339-341), one can find the preliminary results of an immunization survey conducted recently in Des Moines and Polk County that aren't markedly more encouraging than the findings reported earlier from Iowa City. Also in the current issue (pp. 325-326), an editorial reviews and comments upon a report of a survey of health-care personnel and school teachers that has been conducted in Omaha. All these have revealed tremendous gaps in the utilization that Midwesterners are making of the most desirable of physicians' services—those that keep people from becoming ill.

Every physician fully approves of the measures that are available for the prevention of tetanus, pertussis, measles, smallpox, diphtheria and poliomyelitis—diseases from which everyone should be protected either at certain ages or all of the time. Similarly, every doctor approves of the technics for preventing such diseases as rabies and typhoid in people who have been specifically exposed to them. Moreover, physicians are prepared to administer the requisite shots.

But being ready and willing to administer the vaccines isn't enough. Men, women and children must not be permitted to become vulnerable as a result of their lack of information, oversight or procrastination.

Each of the people whom physicians serve has an inclination to postpone health-protective measures, unless he has become aware of a direct threat to himself or to his dependents, and he adopts any and every excuse for delay. Probably the most frequent of these is: "My doctor hasn't told me that I must."

It seems that there are just two ways in which people can be brought to accept the immunizations that they need. One of them is the staging of immunization clinics, and the second consists of newspaper and magazine articles and radio and television programs, and of direct, individual advice from their physicians.

Physicians have never liked mass clinics of any sort for a number of very good reasons. Such programs involve compulsion of one kind or another, and the standing-in-line is essentially degrading. More importantly, since the physician who attends a particular person in such a setting is likely to be a relative stranger to him, clinics disrupt doctor-patient relationships, and the masses of people who must be served compel the use of assembly-line technics and a consequent superficial-

ity. Certainly the clinics at which children or adults undergo physical examinations at the rate of one every five minutes deserve the doctors' scorn, both because serious problems are likely to be overlooked and because too few of the examinees subsequently go to their respective family doctors for help with the problems that the clinic personnel have diagnosed or suspected. However, the fact that nearly 100 per cent coverage was achieved during the past few years in many of the county-wide Sabin clinics has led doctors to reconsider their attitude toward the mass approach, at least insofar as immunization clinics are concerned.

DOCTORS ARE ANXIOUS FOR THEIR INDIVIDUALIZED ATTENTION TO SUFFICE

Some county medical societies regularly conduct clinics for pre-school children, at which immunizations are administered on a mass basis. In other counties the doctors don't choose to hold them, because they are mindful of the occasional youngster for whom the vaccine can be dangerous if given all at one time—a fact of which only his family doctor may be aware. But even in counties where such clinics are held, pre-school youngsters are only a small part of the total population, and in an attempt to reach all persons, who need attention from time to time throughout their lives, the doctors are employing as many as possible of other means. The IMS Rural Health Committee and the IMS Woman's Auxiliary have some attractive materials for them to use in this activity. The Rural Health Committee has supplies of a leaflet urging tetanus immunizations that is suitable either for enclosure with physicians' statements or for patients to pick up in doctors' waiting rooms. The State Department of Health has a similar leaflet urging a number of the different sorts of immunizations. These are available from the Iowa Medical Society on request.

The IMS also is supplying member physicians with as many as they need of a billfold-size Individual Health Record which, besides providing spaces for identifying information and for warnings about the patient's allergies, sensitivities, chronic diseases, current medications, etc., permits listings of immunizations and dates for their completion or renewal. With a device of this sort, it should be necessary for the physician to get each of his patients to his office only for the first immunization series or set of boosters. Thereafter, he can reasonably hope, most of them will return at the proper times of their own accord.

Both the Rural Health Committee and the Woman's Auxiliary have an AMA poster measuring 18 x 24 in., either on heavy paper or on cardboard, captioned "PREVENTION . . . Your Best Defense!" It's something that each doctor will want to display in his waiting room.

Currently, the Rural Health Committee is circulating a 30-min. moving picture entitled "Tetanus and Its Prevention" for showings at county medical society and hospital staff meetings. Program committee chairmen are urged to make sure that their colleagues have a chance to see it, by borrowing it either from the IMS or from the AMA Film Library, in Chicago.

Within a few weeks, the Rural Health Committee hopes also to have a film on immunizations available for showings to lay groups or over television. When arrangements are complete, the county medical societies will be notified. Right now, however, medical societies or individual doctors who can secure radio time will be including preventive medicine among the topics that they discuss on the air.

PATIENT-BY-PATIENT, DOCTORS ARE STRESSING PREVENTIVE MEDICINE

Still, however, because each person resists anything that is likely to pain him even a little bit, or even put him to a slight inconvenience, each doctor is finding it necessary to talk about this matter with the people whom he confronts, whether in his consulting room or elsewhere. Because the Omaha survey revealed that school officials there have been entirely successful in getting teachers to secure various health-maintenance services on a regular basis, doctors may want to urge other employers to recommend or offer to arrange periodic examinations, chest x-rays and immunizations for their workers. Perhaps doctors may persuade school board members in county-seat towns and smaller communities to follow the lead of the Omaha and Des Moines schools, or to surpass them by asking children to present evidence, every few years, of having completed the same regimen as their teachers, though exceptions would have to be permitted for conscientious objectors.

But whether or not he undertakes any civic actions of those kinds, each doctor has records of the immunizations he has administered to the people for whom he has assumed responsibility, and he will be urging the completion or updating of those records during each of his conversations with patients. Some doctors are including basic shots or boosters, whenever indicated, with each complete physical examination that they perform, and are taking pains to assure parents of large families that triple toxoid and measles inoculations and polio vaccine for their children will be charged for, like a doctor's other services, in an amount adjusted to fit the family's circumstances.

Preventive medicine is the very best service that we physicians have to offer. People need it, and appearances to the contrary notwithstanding, they *want* it! We can't let them go without it, for fear that an epidemic may develop or that tetanus or meningitis, for example, may attack one of them or one of their children.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., COMMISSIONER

Des Moines-Polk County Immunization Survey

The following report has been provided by J. F. Speers, M.D., director, Des Moines-Polk County Health Department.

During November 1964, the Des Moines-Polk County Health Department conducted an all-family immunization survey throughout Polk County.

The purpose of the survey in Des Moines-Polk County was to determine the immunization level of all age groups against poliomyelitis, smallpox and DPT and also against measles in the 0-4 age group. We gathered a good deal of additional information which we hope will be helpful in determining the future direction of immunization efforts. This includes such things as education and occupation of household head, source of medical information, where majority of immunizations were received and reason for rejection or poor status.

METHOD

The sampling method used was developed by Dr. Robert E. Serfling and Mrs. Ida L. Sherman, chief and assistant chief, Statistics Section, Epidemiology Branch, Communicable Disease Center, Atlanta, Georgia. The sample method utilizes the area-probability, multi-stage sampling technic with the allocation of the required sample size determined by the distribution of the population.

A combination of three of Serfling's methods were used:

A. "Procedures for cities with published block statistics." For the city of Des Moines, updated block statistics from the 1960 Census were used to determine the sample size and primary sampling units, and to allocate interview sectors to census tracts. The primary sampling unit consisted of one or more randomly selected city blocks, with the second stage (interview sectors) consisting of a sequence of 16 housing units beginning at a randomly selected starting point in the primary sample unit. A simple random sample of six housing units within the interview sector were visited, and interviews were attempted at all six.

B. "Procedures in cities for which block statistics are not published." Twelve urban towns surrounding Des Moines were grouped together to form what we termed a "suburb" group. These included: West Des Moines, Windsor Heights, Clive, Pleasant Hill, Ankeny, Urbandale, Altoona, Capitol Heights, Marquisville, Saylor, Norwoodville and Lovington. Since there were no census block statistics compiled on these towns, a local map and a rough count of housing units in each block formed the basis of the sample allocation. Maps were obtained from the Iowa Highway Commission and town officials. The remainder of the method for sampling this area division followed the same pattern as Procedure A outlined above.

C. "Procedures for use in rural areas." All rural farm, rural non-farm and non-urban towns and villages were grouped to form a "rural" area division. Maps showing the location of housing units were essential in designing the rural survey. We found an excellent map to fulfill this need is one put out by the Tam Service (R. C. Booth Enterprises, Harlan, Iowa). It not only located all housing units in rural areas by township, but also gave names of families living in each. Nevertheless, many hours were spent in laying out streets and locating housing units for all the rural towns in Polk County. Once all the rural housing units were accounted for by townships and sections within townships, interview sectors were randomly and systematically assigned; first to townships, then to sections within townships, and finally to housing units within a section. The interview sector consisted of two adjacent housing units and both were visited.

SOCIO-ECONOMIC STRATIFICATION

Des Moines Proper was stratified into three socio-economic groups—upper, middle and lower—in an effort better to identify areas of low immunization. Stratification into these groups was accomplished by using three socio-economic indicators from the Census Tract Data Book on Des Moines. The three indicators used to rank the census tracts were: (1) Median years of education completed by persons 25 years old and over; (2) proportion of sound housing units (i.e., housing units in good condition, as opposed to dilapidated or deteriorating housing units); (3) the crowding factor (proportion of occupied housing units with 1.01 or more persons per room). The census tracts ranking highest socio-economically, with 25 per cent of the population, were classified as the upper socio-economic group; the middle 50 per cent as the middle; and, the lower 25 per cent as the lower.

SAMPLE SIZE

Two basic requirements of Serfling's Method are to have surveyed at least 50 children less than five in each socio-economic group or area subdivision, and to have at least a 95 per cent completion status. Both of these requirements were satisfied with our 1,426 housing-unit sample.

CRITERIA

For the purpose of our survey, a person was considered adequately immunized against poliomyelitis if he had received either two doses of the oral poliomyelitis vaccine or three or more injections of the Salk vaccine. Persons were considered adequately immunized against smallpox, DPT, DT or T if they had had the series or booster within four years. Those persons questioning whether they had had any of a particular immunization (U) and those knowing they had some injections

Preliminary Results, Immunization Survey—City of Des Moines

LOWER SOCIO-ECONOMIC GROUP

	Per Cent Immunized							Where Majority Received (Percentage)			
Age Group	OPV 2 plus Doses	IPV 3 plus Doses	Either OPV or IPV or Both	Small-pox (ever)	Small-pox (Within 4 yrs.)	Measles	DPT, DT or T (Within 4 yrs.)	Physician	Clinic	Other	No Ans.
0- 4	61.4	236.4	70.4	65.9	58.0	18.2	78.4	43.2	34.1	—	22.7
5-14	65.0	66.4	78.8	82.5	38.7	—	65.7	45.3	35.0	—	19.7
15-39	64.5	57.5	76.0	84.5	9.0	—	40.5	53.5	31.0	2.0	13.5
40+	32.2	13.8	36.2	62.0	2.9	—	18.5	54.7	18.1	0.8	26.4

MIDDLE SOCIO-ECONOMIC GROUP

0- 4	74.2	47.0	81.2	61.2	50.6	27.1	78.8	58.8	25.9	—	15.3
5-14	87.7	86.3	96.3	87.7	31.1	—	73.0	61.2	31.1	0.4	7.3
15-39	76.0	64.9	86.1	91.6	12.5	—	41.5	67.2	23.6	2.1	7.1
40+	48.2	24.3	52.8	80.7	5.3	—	19.6	65.1	15.9	1.4	17.6

UPPER SOCIO-ECONOMIC GROUP

0- 4	79.2	61.4	88.5	75.0	71.9	47.9	92.7	88.5	4.2	—	7.3
5-14	86.3	90.9	100.0	96.3	32.9	—	79.9	83.1	7.3	—	9.6
15-39	79.1	75.1	93.7	93.7	15.3	—	46.5	80.7	8.6	0.7	10.0
40+	47.3	27.2	54.1	87.7	12.3	—	19.2	74.2	9.6	0.9	15.3

Immunization Survey—Polk County

SUBURBS

	Per Cent Immunized							Where Majority Received (Percentage)			
Age Group	OPV 2 plus Doses	IPV 3 plus Doses	Either OPV or IPV or Both	Small-pox (ever)	Small-pox (Within 4 yrs.)	Measles	DPT, DT or T (Within 4 yrs.)	Physician	Clinic	Other	No Ans.
0- 4	78.8	56.6	87.9	59.6	51.5	24.2	82.8	74.8	14.1	1.0	10.1
5-14	85.0	90.2	94.8	86.2	27.0	—	75.9	81.6	12.1	1.1	5.2
15-39	83.3	66.5	91.4	86.1	11.4	—	43.3	83.3	12.2	1.6	2.9
40+	49.8	38.2	56.7	79.7	7.8	—	26.7	76.5	9.2	1.9	12.4

RURAL

0- 4	81.5	50.0	90.7	64.8	46.3	29.6	77.8	63.0	3.7	7.4	25.9
5-14	84.9	89.9	95.8	82.3	28.6	—	76.5	71.4	14.3	4.2	10.1
15-39	80.7	67.6	92.6	88.6	10.2	—	44.9	80.1	8.0	4.5	7.4
40+	45.5	25.4	51.2	70.9	2.9	—	27.4	65.6	5.7	0.0	28.7

or doses but questioning how many (S) were tabulated as follows:

U—0 injections or doses of that particular vaccine
S—1 injection or dose of that particular vaccine

INTERVIEWERS

Six teams of two persons each worked for about two weeks, after taking a two-day training course. We felt that it was very important that each one become familiar with terms on the interview form and know the exact meaning and phrasing of each question.

Each interviewer was given several turns at going through the entire process of interviewing an adult member of a household played by one of the instructors. The other interviewers followed along, filling out questionnaires, also.

It is felt by this department that, since the interviewer is such an important link in the survey process, certain basic criteria are important for this position, as follows:

A. *Age*—Too young a person lacks interest or does not sense the project's importance, and too old a person will be unable to get around and will tend to get confused readily. Desirable age—25 to 45 years.

B. *Education*—Persons lacking in education will not grasp terms or procedures quickly, and the person with more than two years of college will probably feel the job too far below his capabilities. Desirable education—high school graduation through two years of college.

C. *Sex*—This does not make any apparent difference.

D. *Experience or Background*—The average American housewife makes a good interviewer. Experience, even in the medical field, does not add to the interviewer's effectiveness and, in many cases, may detract.

SUMMARY OF FINDINGS

Des Moines-Polk Counties immunization levels are quite good. However, deficiencies were detected in the areas listed below:

(1) Many children in the 5-14 age group have not had a DT booster immunization within the past four years. This is particularly true in the lower socio-economic group.

(2) Some work needs to be done to raise the poliomyelitis immunization levels in the pre-school and adult age groups.

(3) Most people do not continue to get periodic smallpox vaccinations throughout their lifetime.

(4) A large group of families wait to immunize their children until just before they enter school.

(5) Adults neglect to get periodic tetanus boosters.

(6) Measles vaccinations are well under way, with nearly half of the children less than five in the upper socio-economic group receiving vaccine. However, the middle and lower groups are considerably less protected (27 per cent and 18 per cent respectively), probably due to high cost and lack of sufficient promotion.

Unfortunately, we did not ask whether the child had had measles or not, and therefore, we are unsure of the number under five years of age who are still susceptible.

Permissive Use of Obstetrical Unit for Clean Gynecologic and Surgical Cases

In the past few weeks we have received many letters from hospital administrators asking for an interpretation of Bulletin No. 38 from the Joint Commission on Accreditation of Hospitals regarding the use of OB beds for patients of other sorts.

In Iowa it has been the policy of the Department of Health that hospitals segregate obstetrical patients, but there are no firm rules or regulations or power to enforce the segregation procedure. Better standards of care have been encouraged by educational programs.

It must be emphasized that segregation of obstetrical units is done primarily to prevent infection in the maternity patient and newborn infant. These patients are inherently susceptible to infections. If adequate measures are not taken to prevent infection in the maternity unit morbidity and mortality will be increased.

When infections do develop in the obstetrical area and the provision of proper safeguards cannot be demonstrated, the hospital and medical staff are liable for the consequences.

The bulletin of the Joint Commission firmly emphasizes that segregation should be disbanded only when absolutely necessary. It further provides procedures which must be followed in seven areas. These procedures have been reviewed and comments from the Health Department have been added to each.

1. "The administrative and medical procedures entailed in the management of such a unit should be contained in the Rules and Regulations that accompany the By-laws of the medical staff of the hospital."

This cannot be a haphazard arrangement to be used at the discretion of any single staff member, but must be a preplanned and controlled activity.

2. "Strict segregation of the nursery, labor and delivery room suites, must be maintained."

The architecture of many existing hospitals precludes this. For example, in some hospitals the patient rooms are at the dead-end of a floor, and one can gain access to them only by going through nursery and other service areas. In such cases, the use of the obstetrical beds for other patients should be discouraged. Hospital administrators, trustees and medical-staff members should keep this point in mind in planning future remodeling or building.

3. "Within the unit, it is preferable that the clean gynecologic-surgical patients be segregated in a separate wing or at one end of a corridor, with the obstetric facility in the opposite wing or end of corridor, insofar as possible. If this is not possible, room segregation is essential and must be adhered to."

This statement has been worded very nicely, but it requires individual isolation for each pa-

tient, which might cost more than the income from the use of a room.

4. "Separate nursing service is desirable. If this cannot be maintained, rigid supervision of individual nurse activities is imperative."

This is always a problem in a small hospital where the obstetric service is so small that it is not possible to supply separate nursing services. This can be accomplished with good planning and good supervision. The Division of Maternal and Child Health is available for consultation on this matter.

5. "Control of admissions to and transfers from this combined unit must be absolute and rigid, and constantly supervised, preferably by the chief of obstetrics or a special committee, as the case may be. The person or persons assigned this authority are responsible to the chief of staff and the authority of the hospital. It is necessary for this assigned person or his deputy to have a daily conference with the obstetric nursing supervisor. They must be available at all times for decisions relative to problems of admission and discharge which will invariably develop."

This statement emphasizes that each patient of this type must be individualized and must be seen immediately upon admission. This procedure would require a great deal of time on the part of the existing staff in a hospital which does not have a house staff.

6. "The limitation of the number of visitors and the specific visiting hours usually prescribed for obstetric patients should continue in force for all patients in the combined unit. The infants must be safeguarded from exposure."

Here again the architecture in many Iowa hospitals will pose problems. The wishes of the patient to have visitors must be related to problems that might be caused by the introduction of infections.

7. "The Commissioners of the Joint Commission have not and do not desire to publish a list of suitable or acceptable cases for admission to a combined unit. This is the responsibility of the medical staff and hospital authorities. The admissions to the combined unit must be adult women, and the cases must be 'clean.' If an infection is found during surgery, the patient must not be returned to the obstetric unit."

The Commissioners of the Joint Commission have taken a good stand on this problem. This again puts the burden of selecting patients right back on to the hospital staff. The types of patients who may not be admitted to an obstetric unit under any circumstances must be reviewed. These patients include those with threatened or incomplete abortions, those with any type of existing infection, and the patients who give histories of having had a recent diarrhea, skin infection, or upper respiratory ailment either in herself or in a family member.

To summarize, it is imperative not only to safeguard patients but to protect the hospital and staff from any practice or procedure which might increase their liability.

If any hospital staff members have any particular problem or doubt regarding the safety of the obstetrical patients, they are encouraged to call upon the Department of Health for such consultation service as it may be able to give.

Hypoglycemia During Chemical Intoxications

The National Clearinghouse for Poison Control Centers has become interested in the occurrence of hypoglycemia during chemical intoxications. Since hypoglycemia may occur concurrently with other well-known depressant symptoms of these chemicals, it often may not be recognized. In some cases, treatment of the hypoglycemia has specifically benefited the patient by reversing the central nervous system depression that was attributed to the ingested chemical.

In a case reported in JAMA,[1] an 8½-month-old child died eight hours after she was found unconscious, her clinical picture being dominated by neurologic signs and hypoglycemia. An organic phosphate poisoning was implicated, but not proved. Since the pancreatic islet secretion is under parasympathetic control, overstimulation may have resulted from the organic phosphate poisoning in a child with labile controls over blood sugar. In animal studies, changes in the microcirculation of the islets of Langerhans suggested that hypoglycemia may be mediated by an alteration of vascular supply.

Alcohol hypoglycemia has been studied from several points of view Freinkel *et al.* point out several recognized conclusions.[2] Well documented pediatric cases indicate that chronic alcoholism is not an essential precursor of this condition, and that chronic malnutrition favors its occurrence. Alcohol hypoglycemia has been reported, however, in children with an adequate diet. Blood ethanol concentrations in the few instances measured have not exceeded the level of mild intoxication. In two cases reported by Cummins,[3] hypoglycemia and convulsions were produced in two children following the ingestion of an unknown quantity of gin and an estimated 20 cc. of cologne, respectively. In the first case, glycogen stores were found to be normal as estimated by microscopic examination of liver sections. Hypoglycemia has been consistently produced in human beings by the ingestion of 35 to 50 ml. of ethanol after a two-day fast.[4] Subjects with marginal gluconeogenic reserves may be susceptible following only an overnight fast.

Because of the frequency of salicylate intoxica-

tions in children, reports of hypoglycemia from this cause are particularly mystifying. Either the hypoglycemia goes unrecognized or there is an unknown set of circumstances in such cases. In June, 1964, Cotton and Fahlberg reported on two infants with salicylism and severe hypoglycemia, and hypothesized that the metabolic interference by the salicylates with the adenosine triphosphate formation and the increased glucose consumption and decreased synthesis of carbohydrate could be the cause of the reduced blood glucose.[5] The reason why hypoglycemia has not been described more frequently in salicylate intoxications may be because of the accidental treatment of the condition by the intravenous administration of glucose-containing solutions. Therefore, blood-glucose determinations should be considered in all cases of salicylism.

Because of the variety of substances that can produce hypoglycemia, those treating accidental poisoning cases must become increasingly aware of this possibility.

1. Hruban, Z., *et al.*: Hypoglycemia resulting from insecticide poisoning. J.A.M.A., **184**:590-593, (May 18) 1963.
2. Freinkel, N., *et al.*: Alcohol hypoglycemia, I. Carbohydrate metabolism of patients with clinical alcohol hypoglycemia and experimental reproduction of syndrome with pure ethanol. J. CLIN. INVEST., **42**:1112-1133, (July) 1963.
3. Cummins, L. H.: Hypoglycemia and convulsions in children following alcohol ingestion. J. PEDIAT., **58**:23-26, (Jan.) 1961.
4. Field, J. B., *et al.*: Studies on mechanisms of ethanol-induced hypoglycemia. J. CLIN. INVEST., **42**:497-506, (Apr.) 1963.
5. Cotton, E. K., and Fahlberg, V. I.: Hypoglycemia with salicylate poisoning. AM. J. DIS. CHILD., **108**:171-173, (Aug.) 1964.

AVAILABLE FROM THE STATE DEPARTMENT OF HEALTH

For venereal disease control
- Procaine penicillin (aqueous or oil suspension)
- Benzathine penicillin G (Bicillin)
- Achromycin (250 mg. capsules)

Immunizing agents
- Triple toxoid
- Diphtheria-tetanus toxoid (Combined, absorbed or precipitated—Adult type)
- Salk and Sabin poliomyelitis vaccines
- Typhoid vaccine triple (Typhoid, para A and para B)
- Smallpox vaccine

Rabies control materials
- Duck embryo anti-rabies vaccine
- Anti-rabies serum

Histoplasmin

Snake anti-venom (kept at poison center and sub-centers)

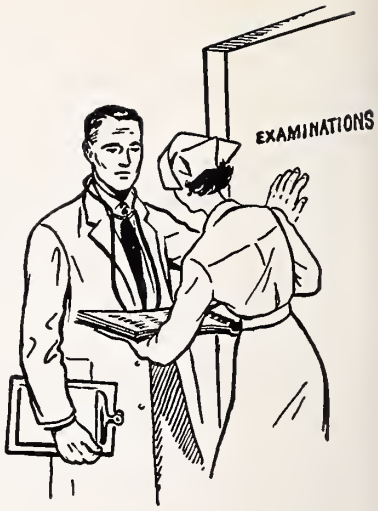
Gamma globulin (for protection of people exposed to measles, German measles, or infectious hepatitis, if the risk is sufficiently great)

For detailed information, see the April, 1965, JOURNAL, *pages 225-227, or telephone the Department.*

Morbidity Report for Month of April 1965

Diseases	1965 Apr.	1965 Mar.	1964 Apr.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	419	562	613	Hancock, Jackson, Jefferson, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	936	1277	1756	Dubuque, Polk, Pottawattamie
Whooping cough	2	1	5	Pottawattamie
Brucellosis	4	5	15	Monona, Scott, Story, Woodbury
Chickenpox	507	743	596	Des Moines, Polk, Scott
Meningococcic meningitis	1	1	1	Johnson
Mumps	526	637	2070	Des Moines, Hancock, Pottawattamie, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	102	64	23	Dubuque, Mills, Muscatine
Rabies in animals	27	17	55	Clayton, Louisa, Story, Wright
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	20	24	4	For the state
Syphilis	52	49	81	For the state
Gonorrhea	157	205	88	For the state
Histoplasmosis	2	2	2	Polk, Wapello
Food intoxication	0	0	0	
Meningitis (type unspecified)	0	4	3	
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	0	
Salmonellosis	9	7	4	Polk
Tetanus	0	0	1	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	0	1	
H. influenzal meningitis	0	0	0	
Amebiasis	0	2	5	
Shigellosis	0	200	1	
Influenza	260	1202	382	Polk

THE DOCTOR'S BUSINESS



Gifts Offer Tax Savings

HOWARD D. BAKER
Waterloo

In past issues, we have discussed opportunities for tax savings through the use of trusts, wills and marital deductions. Another avenue for estate-tax and income-tax savings is the use of gifts.

Present regulations permit an individual to make tax-free gifts of $30,000 *to all donees,* during his lifetime, without incurring any gift-tax liability. This is known as the "specific exemption." An individual may also make gifts of up to $3,000 per year *to each* donee without incurring any liability. Regulations further provide that a gift made by a husband and wife can be treated, for gift-tax purposes, as though made one-half by each. This provision has the effect of increasing the annual exemption to $6,000 and the specific exemption to $60,000 without gift-tax liability. In order to qualify for this "joint" treatment of gifts, both must be citizens or residents of the United States, the person making the gift must not give his wife or husband power of appointment over the gifted property, and neither can remarry during the calendar year of the gift and both must give their consent to so treating the gift.

Gifts to a spouse are also accorded special treatment. The exemption allowed is one-half of the value of the property given. This exclusion is in addition to the $30,000 specific and $3,000 annual exemptions.

As an illustration of the estate-tax savings opportunities, let's assume that you have property with a gross value of $300,000, a wife and no children. Your estate is to go first to your wife, and upon her death to charities. If you were to hold all your property until your death, your taxable estate would amount to $90,000 ($300,000-$150,000-$60,000), and the federal estate tax would be about $17,500. If, on the other hand, you were to give $100,000 to your wife, the estate tax would be only $4,500, for an estate-tax saving of $12,700. In order to qualify, these gifts must have been made three years or more prior to your death, to avoid being regarded as made "in contemplation of death" and thrown back into your gross estate.

In this example, the transfer would require seven calendar years, to avoid gift-tax liability. You could give $66,000 during the first year, using $33,000 of marital-gift deduction, $30,000 of lifetime deduction and the $3,000 annual deduction. That would leave $34,000 to be gifted out during the following six years, at $6,000 per year.

Using the same example, let's assume you have three children and intend your property to go to your wife and children. Without gift or trust provisions, the estate tax would again be $17,500, but by making gifts totaling $100,000 in trust or outright to your children, you could reduce the tax to $4,800. Such a transfer would take three calendar years, with $78,000 going out the first year, $18,000 the second, and $4,000 the third year. To illustrate the income-tax savings, let's assume you are in a 50 per cent tax bracket, and that the $100,000 is earning $6,000 per year in dividends. You would pay $3,000 of income tax on those dividends, but the children would pay only about $700, for an annual tax saving of $2,300.

The value of property *for gift-tax purposes* is its fair market value on the date of the gift. The basis of the gift *for gain purposes* is its value in the hands of the last owner who received it other than as a gift. These details point up an important and often neglected principle—that one should keep complete and adequate records that clearly reflect those bases. Whether you are the recipient of a gift or are the donor, it is very important for you to secure the data and keep a permanent record of that information for gift-tax and income-tax purposes.

The field of gifts is very closely related to the use of trusts and estate planning, and a decision regarding a gift must be considered from all angles. For that reason, it is important for you to make these decisions only upon the advice of your attorney, and after properly weighing all factors. Gift provisions, if used judiciously, can provide a useful avenue for tax-free transfer of sizeable amounts of property over a period of years.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Woman's Auxiliary News

Our New President

Mrs. Henry Boe, 3919 Orchard Street, Sioux City, was installed as president of the Woman's Auxiliary to the Iowa Medical Society, on April 13, at its annual meeting in Des Moines.

Mrs. Boe is the former Cleo Patti Daley, of Birmingham, Iowa, and a graduate of Birmingham High School. She is a 1927 graduate nurse of the Jefferson County Hospital, in Fairfield. At the University of Michigan, she majored in public health, and she subsequently was employed as a nurse at the University of Michigan Hospitals, in Ann Arbor.

Dr. and Mrs. Boe have lived in Sioux City since 1936, where Dr. Boe, a 1931 graduate of the U. of I. College of Medicine, is a general practitioner. They are the parents of three children, and have one grandson.

Mrs. Boe has been an active member of the Woodbury County Medical Auxiliary, of the First Methodist Church, of the Women's Committee of the Sioux City Concert Course, of the Sioux Delphian Society, of the Isis Chapter of the Eastern Star, and of the DeMolay Mothers. In addition, she has been a Girl Scout troop leader, has assisted with the P.T.A., and has belonged to the Lutheran Hospital Auxiliary.

Mrs. Boe has taken a home study course in arts and decoration, and from 1957 until her responsibilities as president-elect allowed her too little time to continue studying, she was enrolled as a part-time student at Briar Cliff College for Women, where she took courses in the social sciences.

She was elected second vice-president of the State Auxiliary in 1962, and served on the Board three years before being chosen president-elect.

Medical Ethics for Physicians' Wives

The following are excerpts from the speech given by Robert B. Throckmorton, general counsel, American Medical Association, at the recent State Auxiliary annual meeting.

What do we mean by "professionalism?" It is something that all of us understand but have difficulty in articulating. We all know that the legal and medical professions were here 100 years ago, that they will be here 100 years from now, and that those who are presently privileged to be members of these professions are stewards of a tradition from the past which must be passed on to the future.

Among the essentials of these traditions, I find the following: (1) These professions must admit to their ranks only those who meet acceptable standards of moral character and education. (2) Those who enter these professions are charged with the responsibility of acquiring certain knowledge and skills, of sharing these with colleagues, of improving them and of remaining competent. (3) The relationship between physician and patient, or lawyer and client, should be one of mutual free choice. The physician and attorney are obligated to place service above self, charge only a reasonable fee, and avoid the exploitation of patients or clients in any way. There is an obligation to serve, and not to abandon, a patient or client. Communications are confidential and privileged. In short, one of the highest degrees of trust known to mankind is imposed by the traditions of these professions upon those who are members of them. (4) These are professions of honor and dignity. Patients and clients are not to be solicited. Each member has a duty to expose illegal or unethical conduct of fellow members. (5) The obli-

gation of the physician or lawyer extends beyond the care of individual patients and clients, and includes obligations to colleagues, the profession and the public.

These concepts and traditions have been formed by the experiences of history and will continue to stand the test of time. By observing them fully and freely, both in letter and in spirit, physicians and lawyers do more than any other groups of people to protect the public interest.

Nebraska's Annual Meeting

I was happy to accept the invitation from Mrs. John A. Brown, III, president of the Nebraska Medical Auxiliary, to attend the Fortieth Annual Meeting of that organization.

At the Sheraton-Fontanelle Hotel, in Omaha, on Tuesday, April 27, I attended the luncheon meeting at which Senator Curtis, of Nebraska, discussed the Medicare Bill, emphasizing the tremendous tax burden that will fall upon the shoulders of all employed Americans if the Bill is passed. Mrs. Virgil Ray Forester, of Oklahoma City, the national representative at the convention, presented her program on safety.

It was a pleasure, indeed, for me to be present at the Nebraska Auxiliary's business sessions, memorial service and installation of officers, and to hear the reports of the state committee chairmen and county presidents. Mrs. J. Whitney Kelley, of Omaha, who had been a guest at the recent annual meeting of the Iowa Auxiliary, is the newly installed president of the Nebraska Medical Auxiliary.

—MRS. HENRY BOE

Report of Treasurer's Activities 1964-1965

Our membership for the fiscal year, as stated in the Annual Report, was 1,255, but since the closing of the books, eight more memberships have been received. The total membership to date is 1,263 or 31 more than last year's final total. In addition, we have 12 national-associate members in Marion County.

The new system of using the "preprinted" membership file cards, sent from the national office, has been quite an improvement, in my opinion. Not only do they save the county treasurers a great deal of work, but they constitute uniform, legible and accurate records for the files.

At the request of the national office that the Auxiliary member's name must agree with her husband's listing, I spent much time this year correcting names that had been listed improperly in the past.

Another request that the national office made that I believe will prove beneficial, was that all state and national file cards should be returned to the state treasurer, whether or not the individuals have remained dues-paying members. On the card of each one who hasn't continued her membership the reason should have been entered. This procedure serves as a prod for the county treasurer to contact every member from the year before, and it promotes more thorough reporting. It aids the state treasurer and the national office as well, in maintaining clean and up-to-date files.

Included in the Annual Report book this year, is a list showing membership by counties. It shows last year's membership, how many members were lost, the number of current members paid, the new

Report of 1964-1965—Handicapped Craft Sales of County Medical Auxiliaries in Iowa

DATE	COUNTY	TOWN	CHAIRMAN	AMOUNT
March 1964	Black Hawk	Waterloo	Mrs. D. E. Conklin	$ 352.78
Sept. 1964	Clay	Spencer	Mrs. F. L. Frink	1,300.56
October 1964	Dubuque	Dubuque	Mrs. E. W. Coffman	341.25
April 1964	Jefferson	Fairfield	Mrs. F. H. McClurg	205.95
October 1964	Polk	Des Moines	Mrs. W. J. Morrissey	1,106.75
May 1964	Webster	Ft. Dodge	Mrs. R. E. Drown	413.20
Nov. 1964	Woodbury	Sioux City	Mrs. A. H. Horst	881.12
			TOTAL	$4,601.10

Several of the County Medical Auxiliaries have had sales for many years, and Jefferson County it first last year. I should like to urge all county Auxiliaries to consider conducting a sale. Most towns have a store that would be more than willing to give space for the pre-sale display of articles that are to be sold. There is a wide variety and unusualness in the articles to be sold. They are well made, and I think the selection of colors and materials has improved in the past few years.

I believe that any Auxiliary that once has a sale would be enthusiastic about having another. For the few hours of work involved, the feeling of having been of help and service to someone who is handicapped, is indeed great.

LAURA MCCLURG, *Chairman*

or reinstated members, and the resulting total for the current year.

A small map of the state was exhibited at the annual meeting. It shows which counties are organized and those unorganized, and the number of members in each county as compared with last year. I must apologize for its appearance as an exhibit piece, for it was merely a working map in my notebook to give me a picture of the distribution of membership.

The Treasurer's books and the Annual Report were audited on April 2, 1965, by Eldon J. Jutting, an accountant associated with J. F. Halliday, C.P.A., and were found to be "proper and correct."

JEAN MERKEL, *Treasurer*

Honored for Service

The 1965 Voluntary Community Health Service Award by the Woman's Auxiliary of the Iowa Medical Society was made Tuesday, April 13, to Mrs. Vern C. Schroeder of 680 Fifty-sixth St., when she was presented with an engraved silver bowl.

She was honored at a luncheon meeting of the Auxiliary in Hotel Kirkwood. Previously she had been recognized by the Polk County Medical Society Auxiliary for contributions to community health programs.

Active in the Raymond Blank Memorial Hospital Guild since 1953, Mrs. Schroeder is currently corresponding secretary and has served as president of the guild.

Mrs. Schroeder has served in numerous other community organizations. She was co-chairman of the United Campaign educational committee in 1953 and co-chairman of Heart Sunday for the Polk County Heart Association in 1963.

Mental Health Project

The Council on Mental Health of the American Medical Association has suggested that each county Auxiliary might prepare a Directory of Community Mental Health Facilities. Such a Directory would be of value to practicing physicians as well as to many agencies and individuals who need to refer troubled people for help.

Some cities have directories, but these may not include all the information needed. The Directory suggested is an entirely voluntary undertaking in which the county Auxiliary can serve its physicians and the community.

For anyone interested in this project, complete directions are available upon request. Please contact:

Mrs. B. R. Goldman
2140 Fairhaven Rd.
Davenport, Iowa

"News From Around the Hawkeye State"

Black Hawk County

Mrs. Eugene Goldberg and Mrs. Robert Buckles, president and president-elect of the Black Hawk County Medical Auxiliary, visited the four hospitals of the Waterloo-Cedar Falls area Tuesday to present checks totaling $200 each.

The money, proceeds from the Auxiliary's annual Medicine Ball, will be used by the hospitals for student loans, for new equipment or furnishings, and for new hospital additions.

The presentations were made to hospital administrators.

Hamilton County

Mrs. O. C. Buxton of Webster City, entertained eight members of the Hamilton County Medical Auxiliary at a brunch in her home on a Friday morning early in May. Guests were Mrs. N. A. Schacht of Fort Dodge, fifth district counsellor, and Mrs. J. W. Howar of Centerville.

Reports on the Iowa State Medical Auxiliary meeting held in Des Moines in April were given by Mrs. J. L. Ptacek and Mrs. E. K. Lowary. Plans were formulated by the Rural Health Committee for visiting the nursing homes and county homes.

Jefferson County

Mrs. John Castell was named 1965 Woman of the Year for Fairfield, at a luncheon of the Fairfield Women's Club held in the McElhinny House.

Mrs. Castell is active in Sunday School, WSCS and other church work in both teaching and

policy-shaping capacities, as well as United Church Women. She is past president of Chapter E, TTT and Lionels; a member of the Fairfield Women's Club where she has held many offices and is currently treasurer of the fine arts department. She also sings in the club's chorus.

Mrs. Castell has been treasurer of the Medical Auxiliary the past two years. She is a member of the Hospital Auxiliary board and the High School Music Auxiliary, has been a Girl Scout leader and a Den mother, and an active member of PTA. She has given her services for various drives including the United Fund.

News From Our Councilors

District VIII

In February it was my pleasure to bring two wives of legislators, Mrs. Wright and Mrs. Resnick, to the Legislative Tea given by Polk County Auxiliary. The program and appointments were most appropriate.

A few weeks later, Dr. Bishop and I were guests of the Muscatine County Medical Society at a reception for Dr. and Mrs. Ward. Following the reception, we attended the annual dinner of the Muscatine Chamber of Commerce with members and guests. Dr. Ward and his speech were well received. From this experience, District VIII gained a new member-at-large, Mrs. John Spencer.

Eldercare-Medicare programs have been time-consuming during the past few weeks. At "Conversational Politics" groups throughout the county, I've made several talks. The comments after the meetings have made this a rewarding experience.

MRS. JAMES BISHOP
District VIII

District IX

The months since our last meeting have been most interesting, for I have concentrated on our members-at-large. The personal contacts have really paid off. Since visiting these prospective members in their homes, I have received dues from 19 members. Out of a possible total membership of 112, we now have 96 paid members. I feel this is a good start toward getting them interested in Auxiliary work and toward possible organization.

Last week I spent an evening with the Wapello County members at their meeting and was received most cordially. They have been quite busy. The group sponsors a nurse's scholarship for a local girl; were instrumental in getting the blood bank for southeast Iowa; and donated to HELF and AMA-ERF.

Marion County members have been busy with their County home, and this year have purchased a hair dresser's sink and chair for the ladies there. They have visited the Home each month, and have provided entertainment and treats. The Auxiliary members worked for the school immunization program three days this year. They entertained their husbands on Doctor's Day at a social hour and dinner, and presented each with a red carnation. They have donated $50.00 to the Good Ship Hope, and $100.00 to the Iowa Medical Foundation student loan fund.

Mahaska County Auxiliary members have been busy with many civic activities. They honored their husbands on Doctor's Day, and have held regular meetings and made donations to HELF.

I also visited in Appanoose County. The Auxiliary there has been busy helping to set up a homemaker service in Centerville.

MRS. D. A. MATER

The University of Iowa WA-SAMA Group

Our group has been deeply interested in service projects this year. We are making weekly visits to the Johnson County Home, and are helping the residents to make aprons and rugs, and to learn other crafts. The residents' appreciation really makes the trips worthwhile. We also made paper hats for Valentine's Day for the patients in Children's Hospital in Iowa City.

Our annual spring luncheon was held March 20 at the University Athletic Club. After a delicious lunch, a quartet from the Women's Barbershoppers in Cedar Rapids presented a short program. At that meeting we also elected new officers for the coming year, 1965-66. Elected were: president, Anita Jochims; first vice president, Janet Maharry; second vice president, Emily Munson; secretary, Edie Swanson; and treasurer, Nancy Bardole.

MRS. GORDON JOHNSON

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

President-Elect—Mrs. S. M. Korson, Box 111, Independence 50644

Recording Secretary—Mrs. L. H. Prewitt, 33 Birchwood Hills, Ottumwa 52501

Corresponding Secretary—Mrs. H. C. Leiter, 2400 E. Solway, Sioux City 51104

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Veverka, Prairie City 50228

Co-Editor—Mrs. R. R. Carlson, 826 Sherman Drive, Ankeny 50021

JUL 16 1965
San Francisco 97122

JOURNAL

of The

IOWA MEDICAL SOCIETY

OFFICIAL ISSUE

- "The Next Twenty Years in Higher Education," Howard R. Bowen, Ph.D.—Page 349
- "Treatment of the Fractured Ankle," W. R. Hamsa, M.D., and D. W. Burney, Jr., M.D.—Page 353
- "The Role of the Patient in Surgical Convalescence," Fred T. Kolouch, M.D., Ph.D.—Page 363
- "Bleeding From the Duodenum Caused by Adenoma of Brunner's Glands," E. J. Drew, M.D.—Page 368
- "U. of I. College of Medicine Clinical Pathologic Conference"—Page 371

AMYTAL TAKES THE EDGE OFF DAYTIME ANXIETY AND TENSION

Amytal is a moderately long-acting barbiturate that takes the edge off daytime anxiety and tension without significant change in mood and attitude. Since Amytal is metabolized in the liver within twenty-eight hours, overlapping of effect is minimized, and renal damage does not constitute an absolute contraindication to the drug.

Side-Effects: Idiosyncrasy or allergic reactions to the barbiturates may occur.

Precautions and Contraindications: Amytal should be used with caution in patients with decreased liver function, since a prolongation of effect may occur. Administration in the presence of uncontrolled pain may produce excitement. Warning—May be habit-forming.

Dosage: Doses should be individualized for each patient. The usual adult sedative dosage ranges from 30 mg. (1/2 grain) to 50 mg. (3/4 grain) two or three times daily.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis 6, Indiana.

AMYTAL® AMOBARBITAL

Lilly

401174

JULY, 1965

Russian Thistle
(Salsola pestifer, A. Nelson)

Distress for Allergic Patients

Benadryl®
(diphenhydramine hydrochloride)
PARKE-DAVIS

To Combat Symptoms of Weed-Pollen Allergy

This time-tested agent provides two actions that effectively combat symptoms of seasonal allergy: *Antihistaminic*—relieves sneezing, nasal congestion, itching, and lacrimation. *Antispasmodic*—relieves bronchial and gastrointestinal spasm. **Precautions:** Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this product. Hypnotics, sedatives, or tranquilizers, if used with BENADRYL, should be prescribed with caution because of possible additive effect. Diphenhydramine has an atropine-like action which should be considered when prescribing BENADRYL. **Side Effects:** Side reactions, commonly associated with antihistaminic therapy and generally mild, may affect the nervous, gastrointestinal, and cardiovascular systems. Most frequent reactions are drowsiness, dizziness, dryness of the mouth, nausea, and nervousness. BENADRYL is available in Kapseals® of 50 mg. and Capsules of 25 mg. diphenhydramine hydrochloride. The pink capsule with the white band is a trademark of Parke, Davis & Company.

PARKE-DAVIS
PARKE, DAVIS & COMPANY, Detroit, Michigan 48232

72665

BSP® DISPOSABLE UNIT

H.W.&D. BRAND OF SULFOBROMOPHTHALEIN SODIUM INJECTION, U.S.P.

(50 mg. per ml.)

Bromsulphalein (BSP), one of the most sensitive diagnostic agents for evaluating liver function, is now available in a new Disposable Unit. Each "unit" contains: A sterile BSP syringe calibrated in milliliters and pounds (utilizing the 5 mg./kg. BSP dosage schedule), a sterile disposable needle, alcohol swab and a 7.5 or 10 ml. size ampule of BSP.

The precalibrated dosage schedule imprinted on the syringe barrel makes weight calculations unnecessary—saving time and assuring proper administration of the dye, regardless of patient-weight.

Literature on indications and dosage available on request.

The NEW BSP DISPOSABLE UNIT is supplied in 7.5 and 10 ml. sizes in boxes of 10's and 25's.

HYNSON, WESTCOTT & DUNNING, INC.

(BSP01)

BALTIMORE, MARYLAND 21201

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV JULY, 1965 No. 7

CONTENTS

The Next Twenty Years in Higher Education
Howard R. Bowen, Ph.D. 349

SCIENTIFIC ARTICLES

Treatment of the Fractured Ankle
W. R. Hamsa, M.D., and D. W. Burney, Jr., M.D. 353

The Role of the Patient in Surgical Convalescence
Fred T. Kolouch, M.D., Ph.D. 363

Bleeding From the Duodenum Caused by Adenoma of Brunner's Glands
E. J. Drew, M.D. 368

University of Iowa College of Medicine
Clinical Pathologic Conference 371

EDITORIALS

Nursing Homes Require Our Attention 377

Let's Follow the National Safety Council's Example 378

Staphylococcal Superinfection of the Intestine . 378

Prevention of Gas Gangrene 379

Venereal Disease Reports 380

SPECIAL DEPARTMENTS

President's Page 384

Coming Meetings 385

Journal Book Shelf 386

Iowa Chapter of the American Academy of General Practice 387

Iowa Association of Medical Assistants 389

In the Public Interest . . . . . facing page 390

The Doctor's Business 391

State Department of Health 392

Woman's Auxiliary News 394

Minutes of the 1965 Sessions of the House of Delegates 397

Fifty Year Club Members 449

Index to the Minutes of the 1965 House of Delegates 451

Iowa Medical Society Officers and Committees . 453

County Medical Society Officers 456

The Month in Washington xviii

Personals xxi

Deaths xxxiii

MISCELLANEOUS

Short Courses at Iowa City 382

Adolescent Menstrual Problems xix

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor.....Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D.....Iowa City
Floyd M. Burgeson, M.D.....Des Moines
Daniel A. Glomset, M.D.....Des Moines
Robert N. Larimer, M.D.....Sioux City
Daniel F. Crowley, M.D.....Des Moines

PUBLICATION COMMITTEE

Cecil W. Seibert, M.D.....Waterloo
John H. Sunderbruch, M.D.....Davenport
Kenneth E. Lister, M.D.....Ottumwa
Richard F. Birge, M.D., Secretary.....Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

The Next Twenty Years In Higher Education

HOWARD R. BOWEN, Ph.D., President
University of Iowa

I AM PLEASED and honored to have been invited to meet with you today—especially because of your close relations with the University of Iowa. Many of you, about half I understand, including Dr. Ward and Dr. Wolfe are U. of I. alumni. Many more of you attend various conferences and programs of the University, and virtually all are involved with the University through your patients.

In my few months at the University, I certainly have not become an expert on medical education, but I am trying to learn what I need to know to do my part. What I have learned so far has given me an enormous respect for the College of Medicine, the University Hospitals, the State Bacteriological Laboratory, the hospital-administration program and other health-related units. I have been greatly impressed by the quality of the faculty and students, by the programs, by the outlook, and not least by the Dean, Dr. Hardin, who has been giving the medical establishment at the University outstanding leadership. I can assure you that I shall do everything in my power to support the College of Medicine, and the Hospitals, and to bring about helpful relations between the medical profession and the University.

Dr. Wolfe suggested that I speak on some broad subject relating to education. I have chosen to discuss, "The Next Twenty Years in Higher Education."

UNIVERSITIES HAVE TREMENDOUS RESPONSIBILITIES

Higher education is of course in the throes of an enormous expansion and of a kind of revolution. Our colleges and universities are attempting to adjust to almost cataclysmic social changes.

The birth rate. One of the changes has been the rapid rise in the birth rate. Beginning at the end of World War II, births in America increased from about 2,500,000 in 1943 to 4,258,000 in 1960. It happens that the first of the post-war babies, those born in 1946, reached college age this past year; so the universities and colleges are just now entering a period of enormous increase in enrollment. The problem will be accentuated by the fact that the post-war babies will soon begin producing their own children (some of them have already started) and there will be another great rise in the college-age population a generation from now. In the 30 years between 1960 and 1990, the college age population will just about double.

Demand for higher education. A second social change has been the increasing demand on the part of young people for higher education. This has been due partly to the rising prosperity which has enabled young people and their parents to afford college. Disposable income per family (adjusted for inflation) doubles every 25 years or so, and college education is one part of a continuously rising standard of living. Another factor has been the rapidly increasing availability of student aid, in the form of loans and scholarships.

The increasing demand for education is also due partly to the widespread understanding, among young men and women and their parents, of the need for education in preparing for satisfactory employment and careers. People are perceiving that our economy provides few places for the uneducated and that trained talent is in great demand. May I cite a few figures which summarize the situation in striking fashion.

According to a recent study of the U. S. Department of Labor, the number of unskilled jobs will remain about constant in the present decade, despite a 20 per cent increase in the work force; semi-skilled jobs will increase at about 18 per cent; skilled jobs will increase by 24 per cent; jobs to be filled by proprietors, managers and officials will increase by 27 per cent; and professional and technical jobs by 41 per cent.

The strength of the interest in education is shown also by the enormous popularity of adult education, wherever good programs are offered. The increasing demand shows up also in the rising numbers of persons who engage in graduate or professional study, the latest trend being a rapid increase in post-doctoral study.

The rise in college-going is indicated by the fact that in 1900 about 4 per cent of the college-age group was in college; in the 1930's the figure was about 14 per cent; in 1950, 25 per cent. Today it is 40 per cent, and it is still rising. Various estimates

Dr. Bowen gave this address at the annual meeting of the Iowa Medical Society, in April, 1965.

of the future college population indicate that at least half the college-age group will seek some type of education beyond high school.

When we have two factors of growth working simultaneously—the increase in population and the increasing demand—the results are staggering. For example, enrollment at the University of Iowa has doubled since 1952, and we expect it to double again in the next 15 years. That is one reason why we need big increases in appropriations *now*, and why those of us at the state institutions have been telling the General Assembly that the amounts recommended in the state budget, sizeable though they are, do not fully meet the need.

Knowledge explosion. A third fundamental social change has been the startling proliferation and advancement of knowledge, not only in the sciences but in all of the other academic fields. The new knowledge has whetted the interest of young men and women, and at the same time has increased the demand for highly skilled technical and professional manpower. It has encouraged research and graduate study. It has brought to the universities new fields or subfields of study which must be added to the curriculum. Examples at Iowa are linguistics, medical engineering, computer science, nuclear physics, solid state and plasma physics, molecular biology, quality control, linear programming, and many others. The new knowledge has required the introduction of elaborate equipment that is subject to fantastic rates of obsolescence. It has required a constant expansion of libraries. It has made enormous demands on building space, sometimes to the extent that a single piece of apparatus requires a whole new building. It has made necessary the addition of many specialized technicians to operate and service the new equipment. In some cases, it has required the retraining of faculty members.

The proliferation of knowledge has also created some imbalance in our universities, in that it has tended to emphasize natural science at the expense of the humanities and social studies—especially since most outside sources of support have tended to flow toward the sciences. This imbalance needs correcting—not by weakening the sciences but by strengthening the humanities and social studies. The proposed Federal Foundation for the Arts and Humanities is a step in the right direction.

World position of the United States. A fourth social change is the altered world position of the United States. Whether we like it or not, our country has become a world power with far-flung interests. We are therefore called upon to be informed about remote Asian and African countries. We must be able to deal with the Chinese and the Russians, and must know their languages, their history, their economic trends and their modes of thought. We must prepare diplomats, business men, military people and others for service in all parts of the world, to look after our interests, and to assist in economic and social development. One of the reasons we are so short of highly trained manpower at home is that we have been called upon to provide great quantities of technical skills for the whole world. Our new world responsibilities have added a whole new dimension to higher education.

Education as an instrument of social and economic progress. A fifth social change is one of attitude toward higher education. In America we once looked upon universities, individualistically, as sources of *opportunity* for young men and women. Today, we properly cling to the opportunity concept, but we also look upon higher education *socially* as an instrument of regional or national economic and social development, and as a means to national power. We have emerged into what someone has called the "education society," in which the development of individual human capacities and research is regarded as the fundamental instrument of economic and social progress. This new attitude toward education, which I think is a valid one, places upon institutions of higher education the duty to carry on great programs of research, teaching and public service that were scarcely thought of a few decades ago.

Much is asked of our colleges and universities today. They are expected to be teachers of undergraduates; educators of graduate and post-doctoral students; centers of research and discovery; a leading source of new ideas; the focus of artistic and cultural life; gathering places for conferences and short-courses on myriad subjects; consultants to industry, government, the professions and the citizenry; radio and TV broadcasters; and even promoters of athletic events and great Saturday afternoon spectacles. Colleges and universities are considered—indeed expected to be—catalysts in regional and national economic growth, and magnets to attract industry to an area.

In my opinion, we are in danger of expecting too much of our colleges and universities and asking them to do too many things. Especially in view of the coming heavy student loads and the increasing need for basic research and scholarship in many fields, the university of the future probably should focus largely on what I consider to be its main business—teaching at all levels from freshmen to post-doctoral, and basic research and scholarship.

Moreover, in our concern for economic development through higher education, we should never forget the older concept of education as *opportunity* for young people. The opportunity idea was never more relevant than at present, when we are trying to assimilate various minority and disadvantaged groups into our society. In the last analysis, it is through education that the slow and difficult job of removing economic and cultural barriers will be achieved. Our colleges and universities in my opinion, should be more aggressive than they have been in recruiting and educating

qualified members of minority and other underprivileged groups. In this work, the colleges must work with education at all levels from nursery schools on up.

Improvement of elementary and secondary education. A sixth social change has been the strengthening of elementary and secondary schools. For this, we are perhaps indebted to our competition with the Russians. The launching of Sputnik, which brought their educational achievements to our attention, may well turn out to have been the greatest single event in American education in recent times. At any rate, vast improvements have been made in recent years in elementary and secondary education. Students are better prepared for college than they were 10 or 20 years ago, and further improvements are still going on. These developments have made possible improved education in college and university. They have enabled us to raise the intellectual level and the rigor of studies. One can now hope that colleges and universities may be able progressively to reduce their heavy teaching loads of essentially secondary-school subjects such as elementary mathematics, elementary English, and elementary foreign language. And one can hope they may be able to concentrate on subjects of true university grade.

The new undergraduates. A seventh social change relates to the undergraduate students themselves. For a variety of reasons, they are more mature and experienced than the students of my generation. They have travelled more, they have had richer experiences, they are more aware of public affairs, and they have had better educations than earlier generations. In their high schools they have already experienced much of the old-time traditional college life, including football, bands, parties, automobiles, and even Greek letter societies. When they get to college—or at least after a year or two of college, if properly guided and motivated—they are ready for serious study, and for extracurricular life relating to the arts, ideas, religion, public affairs, discussion, and, as everyone knows, social action.

I do not mean to imply that they give up all frivolity, that they don't have good times, or that they are invariably mature and intellectually sophisticated. What I am trying to say is that the contemporary student is amenable to more rigorous study and to a more mature and intellectually-based extracurricular life than were the earlier generations of students. This condition is reinforced at the universities by the presence of rapidly increasing numbers of graduate and advanced professional students, who exert considerable influence on the tone and values in the university community. Colleges, therefore, are making the transition from communities mainly adolescent in character to communities partially adult in character.

WE MUST TAKE STOCK

The social changes I have mentioned are exerting an enormous impact upon our universities and colleges individually and collectively. Each institution whether long-established or brand new, is required to assess its role and to determine how it can best fit the needs of tomorrow, taking into account its unique tradition, its location, and its resources. In many states, broad statewide studies of the future of higher education are being made and new permanent planning agencies are being created.

Here in Iowa, a long-range study is under way. This study was initiated by the Board of Regents. It includes the State Board of Public Instruction and the private colleges and universities as well, and is directed by Professor Willard Lane, of the University. The results of this study should be available in about a year, and should provide useful guidelines for the future on subjects such as the future of junior colleges, a state college for western Iowa, technical-vocational education, the future of the present state institutions, and not least, the role of the private colleges.

Increasing roles of public institutions. One response to the social changes I have mentioned has been the establishment throughout the country of many new colleges and universities. New ones and branches of old ones are springing up everywhere. At the same time, almost all existing ones are growing. In general, however, private institutions are not growing as rapidly as public ones, and the proportion of students in public institutions is rapidly rising. This fact has some important consequences.

In the past, American education has depended on a few private institutions (many of them in the Northeast) to set standards of educational quality and to carry on educational leadership and experimentation. In the future, as these institutions occupy a progressively smaller share of higher education, leadership and experimentation must be transferred in part to the state institutions located in various parts of the country. Therefore, those state institutions with the necessary traditions and resources will have a special responsibility to become more concerned than ever before with educational quality and leadership. I believe the University of Iowa has an important function in educational leadership and experimentation.

A PROGRAM FOR U. OF I.

Growth and quality. At the University of Iowa we hope that growth can be managed so that it becomes an instrument of qualitative advancement as well as merely a means of taking care of more students in some routine fashion.

Growth involves addition to faculty. We hope to recruit new teachers and research workers with care, so that the faculty of the future will be not only larger but stronger. In fact, the building of the faculty is the item of highest priority on the agenda.

Growth involves the addition of academic build-

ings, and thus creates the opportunity for a face-lifting of the whole campus. We hope to design and locate these new buildings so that we end up not only with more real estate but also with a well-planned, coherent, and beautiful campus.

Growth involves the addition of new student housing. We hope this housing can be designed so that it will create new opportunities for the social and intellectual growth of our students.

Growth creates the opportunity to introduce new educational and research programs, and we shall be alert to add those that will strengthen the University. However, my colleagues and I tend to be very conservative regarding the addition of new programs. We are more interested in strengthening and giving greater depth to the programs, fields, and courses we now offer, than we are in proliferating our activities. But entry into certain selected new areas can be invigorating, and is necessary if we are to be in tune with changing times.

I am particularly conscious of growth and quality in medical education at Iowa. There is obviously an urgent need to increase the student body of the College of Medicine. As one of our highest priority items, we have requested an appropriation for a new basic-Science building. If and when this building is completed, it will be possible to increase the annual flow of students entering the medical school from the present 120 to 160, or (as I am hoping) even more. But we hope and intend that through this expansion we shall also improve facilities for both teaching and research to the end that we shall have an even better medical school than we now have.

Efficiency. The adjustment to rapid growth will also include efforts to achieve greater efficiency of operation. Education is a very human and personal thing, and it does not lend itself readily to the cost-saving technics of the factory or farm. In fact, because of the great economic return that investments in education bring, it may be more efficient to spend more money per student, rather than to find ways to spend less. However, there are possible economies, and they should be exploited. We are concerned to cut costs at the University of Iowa.

Perhaps the most important economies may be achieved by re-scheduling programs so that buildings and equipment are in use more hours of each week and more weeks of each year. Progress has already been made on this at the University, and even more can be accomplished as long-standing customs are gradually modified.

The University is already on virtually year-round operation. There were more than 6,000 students in residence during the 1964 summer session (almost half as many as in the regular academic year), and increasing use is being made of late August and early September. In the next few years, I anticipate increasing operation on Saturday mornings and in the late afternoons and evenings.

Another possible avenue of economy is to streamline the curriculum by reducing the number of thinly populated courses and programs. However, this is a limited possibility. For one thing, as the size of the University increases and the risk of impersonality becomes greater, the importance of caring for the individual student and of maintaining close relationships between students and teachers becomes greater. Preserving the personal touch may work against streamlining and consolidating the curriculum. Similarly, as the University becomes larger, the academic ability of the students will become higher. Already there has been a marked increase in the average ability levels of our students. This has occurred not because the admissions policy has changed or because the dropout rate has increased. These have not changed. It has occurred because academic standards of the University are known to be rising and the students who choose to come to the University are preponderantly from the higher levels of ability. At any rate, as the number of exceptional students increases, the need for honors programs and other special opportunities will become greater. Also, as the University grows, the proportion of students at the graduate and advanced professional levels is expected to increase, and many small classes and special programs will be required for these students. The need to introduce new subjects of study such as non-Western cultures, exotic languages, new scientific specialties, etc., also militates against consolidation and streamlining of curriculum.

Wholesale and ruthless consolidation of curricula would not be desirable or feasible. However, there is much wasteful proliferation of curriculum, and every institution needs to work constantly toward consolidating and streamlining in the professional colleges as well as in the arts and sciences.

Much has been said about the use of TV, audio-visual aids, teaching machines, and other instructional aids as a way to economy in education. These devices all have a place in education, but so far their role has been mainly to enrich and improve instruction rather than to reduce cost. The same could be said for independent study. So far, when well done, independent study has usually required as much faculty time as conventional classroom instruction. Nevertheless, there is need for continuing exploration in the area of instructional aids and independent study.

I have never been convinced that American students cannot work more independently, with less time in the classroom and with less detailed supervision, than the present system requires. The greatest visual aid is still the printed word, and the book is still the most efficient substitute for the teacher.

(Continued on page 376)

Scientific Articles

Treatment of the Fractured Ankle

W. R. HAMSA, M.D., and
D. W. BURNEY, JR., M.D.
Omaha, Nebraska

THE INTERPOSITION of the ankle joint between movable tarsal joints and the rigid tibial lever predisposes the ankle joint to frequent injury. The damage can range from common sprain to fracture and fracture dislocation. Sprain pathology is so common that many physicians suspect it whenever there is an absence of obvious deformity, and proceed with the accepted sprain treatment. The gradations, however, from soft-tissue injury alone to actual bone injury are clinically imperceptible, and as a result, numerous mild fractures are treated as sprains. Such an approach predisposes a mild undisplaced fracture of the ankle or a severe ligamentous tear to the chance of disturbed physiologic healing, and threatens the attending physician with medicolegal difficulties. Thus, the varied ankle fractures deserve periodic review.

Early writings stressed the serious nature of ankle fractures. Dupuytren[1] noted that these injuries resulted in "lameness" and deformity, although he reported cures in all except five of 207 cases. We may question his definition of the word *cure,* but we appreciate his description of a splint, and note that the methods which he outlined seem to have included features that still are regarded as important. His protégé Maisonneuve is credited with demonstrating that the external rotation of the foot on the tibia is the force that usually "opens" the ankle mortise. Ashhurst and Bromer[2] reported a classification of fractures of the ankle based on severity and mechanism. Although those bases may have some academic value, a better classification is based on whether the ankle mortise is intact or is disrupted. This is the logical approach from the therapeutic and prognostic standpoints.

The ankle joint is known as a ginglymus type of diarthrosis; its primary movement is hinge-like.[3] In the erect position, the foot is at a right angle to the leg—i.e., in its normal position, the ankle joint is in flexion. The flexion-extension range approximates 90°, and the bones range about an obliquely transverse axis, as indicated by the natural lateral-pointing of the toes. This axis is slightly anterior to the level of the tip of the lateral malleolus. The talus is wedge-shaped superiorly, and is wider anteriorly. When the ankle is extended—i.e., in the equinus position—the narrower portion of the talus rests within the mortise, whereas in flexion—i.e., in the calcaneus position—the widest portion of the talus is forced between the tibia and the fibula. Regardless of the position of the foot, the talus remains in close contact with the fibula because of the rigidity of the distal ligament of the lateral malleolus and of the posterior talo-fibular ligament. In a position of equinus, the ankle joint may have a small degree of lateral motion, but such movement is primarily tarsal in location. The talus represents the key to the ankle mortise. Force applied to the ankle passes through the talus, but usually fractures the tibia or fibula. Fractures of the talus are rare. On active ankle plantar flexion—i.e., equinus—the fibula is forced downward because of the muscle-origin pull of the major portion of the soleus and posterior tibial and all of the flexor hallucis groups.

DIAGNOSIS AND EVALUATION

One must attempt to determine the mechanism of injury. Is the injury due to external rotation, to adduction, to abduction, or to compression in the long axis of the leg? A reversal of the eti-

Dr. Hamsa is a professor and Dr. Burney is an assistant professor in the Department of Orthopedic Surgery at the University of Nebraska. Dr. Hamsa made this presentation at the 1964 annual meeting of the Iowa Medical Society.

ologic direction and force is advantageous in achieving final stability of the fracture fragments. One should compare the injured member with the normal foot, ankle and knee. What is the relationship of the normal foot to the knee joint? A mild variation from the expected normal may be represented by an increased degree of tibial torsion internally or externally, and the injured ankle logically can be made most stable in a comparable position. What is the extent of soft-tissue damage, as evidenced by the degree and localization of the swelling? One should locate points of tenderness—i.e., in the bony and ligamentous anatomical structures. This is very important in mild fractures or sprains. Severe fracture-dislocations are readily recognizable by their appearance.

Anteroposterior and lateral x-ray studies are quite routine for ankle-injury evaluation. A third view in the oblique plane—i.e., with the foot turned inward 25°—gives a more anatomical outline of the tibio-talar relationships. All views should be obtained in ankle injury cases, if time and the patient's status will allow.

Prognosis of ankle fractures will depend upon whether or not anatomical repositioning of the fragments has been obtained and can subsequently be maintained throughout the healing period. If normal alignment is obtained in both anteroposterior planes and if the tibial articular surface is intact or restored, a good result should follow.

Most closed ankle fractures and fracture dislocations deserve attempts at closed reduction. The injury that is seen shortly after its occurrence and before edema has developed will have a smoother recovery, for edema decreases after reduction. Should regional edema be present on first examination, a compression dressing should be applied in an attempt at an early reversal of this process. Exponents of early reduction favor use of the Esmarch bandage to decrease edema prior to an attempt at reduction. Most orthopedists, when faced by a markedly swollen ankle, elect to defer manipulation until the edema is subsiding under mild elastic bandaging, ice packs and enzyme therapy. This lack of unanimity illustrates the advisability of the particular surgeon's choosing the method that he has found most efficient. Personally, we favor early reduction.

TREATMENT

Manipulative treatment of fracture-dislocations of the ankle follows five basic principles:

1. *Flex the knee to relax posterior knee and calf structures* (Figure 1). Full extension produces the greatest tension in calf musculature. One should relax this power so that manipulative force is applied only to the fracture pathology. Either

Figure 1. Flexed-knee position.

suspend the knee to an overhead bar, or flex the knee over the edge of the table.

2. *Apply traction in the line of the deformity.* Momentary overtraction is desirable, for it prevents breaking of spicules of bone that will aid later in maintaining reduction.

3. *Correct the deformity by manual leverage on intact bone, by pulley forces of tendons, and by traction forces through intact ligaments.* Both posterior tibial and peroneal tendons serve as plantar flexors. Passive dorsiflexion of the foot can thus be used to bring the malleoli forward, but keeping that position may displace these malleoli too far forward. This is particularly true of the medial malleolus fracture. Thus, after reduction, the dorsiflexion position should be released slightly. Direct pressure is applied over the bony prominences of the malleoli. Bear in mind that fractured malleoli move with the talus.

4. *Maintain the reduction.* A well-molded, thin cast is applied over little padding. An assistant is desirable, but as an alternative, the operator can use his anterior thigh surface to support the sole of the patient's foot.

5. *Record the reduction on well-marked x-rays immediately, and have repeat x-rays taken in seven to 10 days* (Figure 2).

AFTERCARE

Considerable argument rages as to the type of cast that should be applied and as to its length. The degrees of padding vary from none to excessive. An absence of padding poses problems of proper fitting, proper molding and difficult removal. Too much padding prevents the best molding, and predisposes to a later loss of control of the fracture fragments. The happy medium of little padding and small felt pads over bony prominences is most logical.

Short leg casts extending up to the knee joint are customary, but that length of cast doesn't adequately control tibial-tarsal relationships. When edema subsides, rotation of the foot on the tibia, particularly external rotation, can occur within a properly applied short leg cast, thereby losing reduction. Anatomical relationships of the foot to the tibia can be maintained over a prolonged period of time only if one incorporates the knee joint in a position of some flexion. The final positioning should compare favorably with that of the sound limb, with the knees and feet in similar positions. This "proper" long leg cast, however, poses a hardship on many elderly or heavy patients and risks the loss of a good reduction.

Inserting a pin through the upper tibia in a short leg cast does control rotation of the foot on the tibia,[5] and this method has allowed the use of short leg casts in most ankle fractures, but it may not control a tendency toward posterior displacement of the talus on the tibia when edema is subsiding. Placement of this transfixing pin in the low tibia, above the ankle joint, is much more efficient (Figure 3), and we recommend this modification for your consideration. Vertical pin fixation by means of a heavy Steinmann pin inserted upward through the heel, across the ankle joint and into the tibia has been used on occasion.[6]

After reduction, one should elevate the cast to decrease edema. This objective can be attained in a few days. Gradual dependency is allowed, but one must not allow a recurrence of the edema. Should it become marked, one must split the cast medially and laterally, and spread the halves slightly. If splitting has been necessary, one should recheck the ankle by x-ray when edema has subsided.

When should weight-bearing be encouraged? The time varies with the patient's degree of injury. The simple malleolar fracture without displacement can bear weight safely in two weeks, as a general rule, though bone-healing doesn't occur before six weeks. When the fracture has been controlled by means of a cast incorporating a transfixing tibial pin, one must defer weight-bearing until it is safe to remove the pin and change the cast. It is suggested that these procedures be undertaken at six weeks, and that gradual weight bearing be increased to the limit of the patient's comfort up to the twelfth week following reduction.

A progress x-ray study is necessary in every reduced ankle fracture. One should check the positions of the fragments in all injuries seven to 10 days following the initial reduction, or immediately after the edema subsides in cases necessitating a splitting of the cast. In the event that reduction has been lost, one remanipulation is justified. Often, such a loss necessitates an open reduction. Perfect alignment is desirable, but the possibility of achieving it doesn't, by itself, justify surgery. In some instances—e.g., in markedly comminuted fractures—perfect alignment may be impossible to achieve, even with open surgery.

OPEN REDUCTION

When is open reduction justified?[7] An inability to maintain an anatomical relationship of the talus to the mortise suggests surgical intervention. The commonest reasons are as follows:

1. *Poor apposition of the medial malleolar fragment.* Separation of this prominence may have allowed the interposition of ligamentous tissues, preventing close bony apposition. Open reduction and skeletal fixation are necessary in such a case, to establish a medial buttress against which the talus may be pushed (Figure 4).

2. *Bimalleolar fractures with a widened mortise.* These represent an exaggerated form of the situation just mentioned, for the fractures may be at the level of the low tibial joint line, and may allow extreme medial and lateral mobility. Fixation of one malleolus by means of a pin, rod or screw may be adequate, although one school of thought insists upon fixation of both malleoli (Figure 5).

3. *Fractures of the tibial joint surface.* In bimalleolar fractures, the posterior lip of the tibial

Figure 2. Before and after closed reduction.

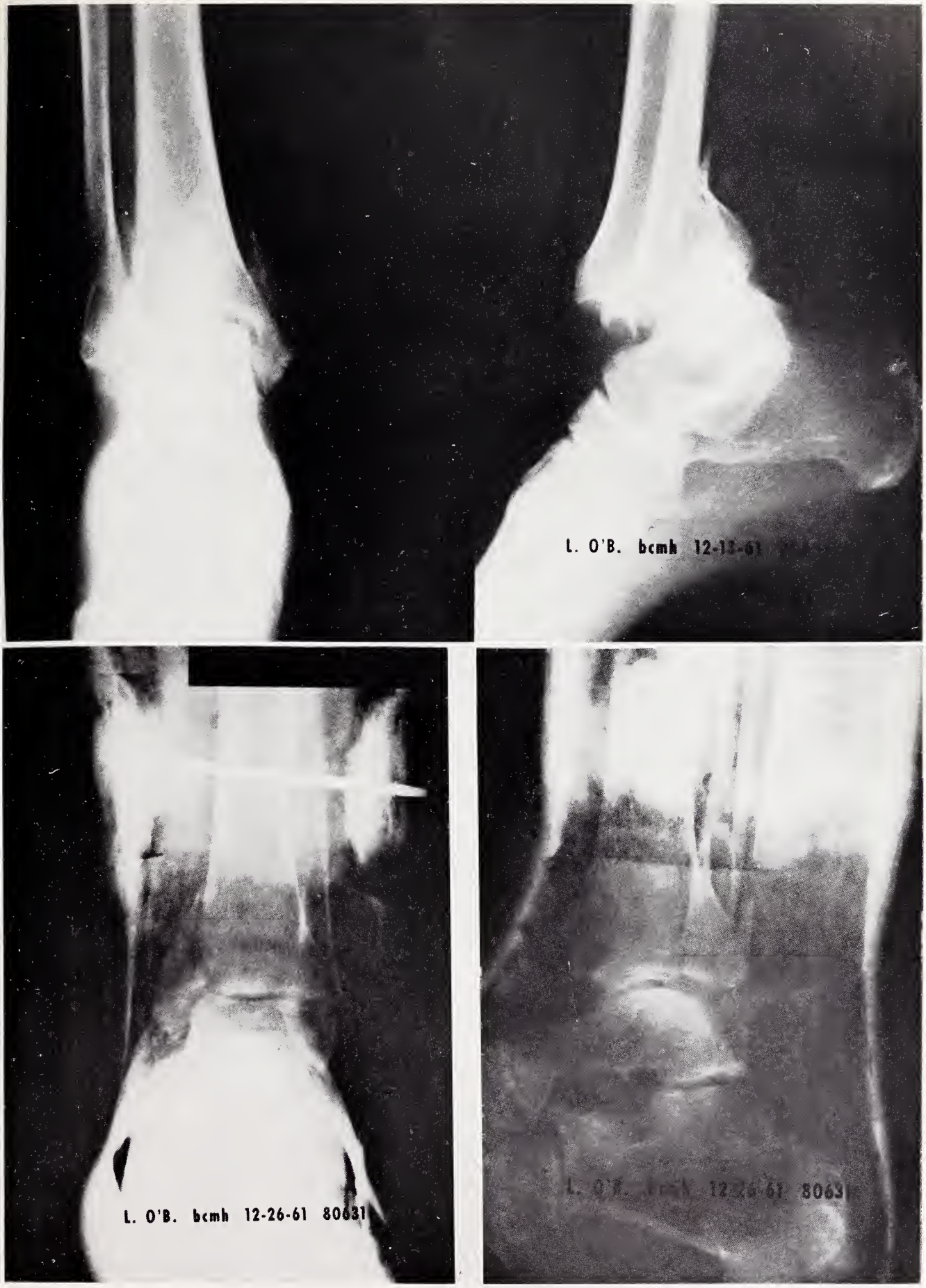


Figure 3. Skeletal fixation after reduction.

Figure 4. Open reduction of medial malleolus.

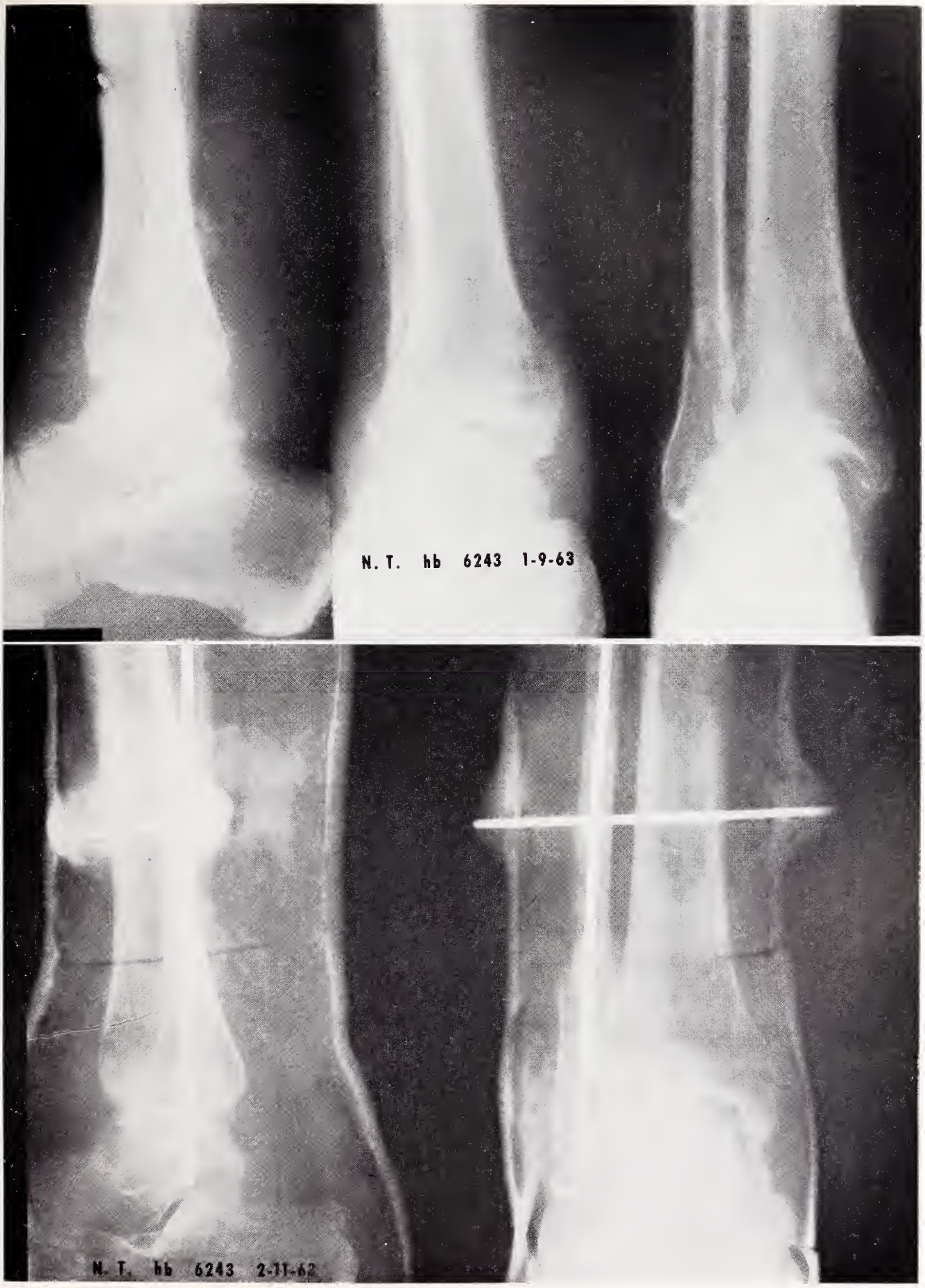


Figure 5. Open reduction of lateral malleolus.

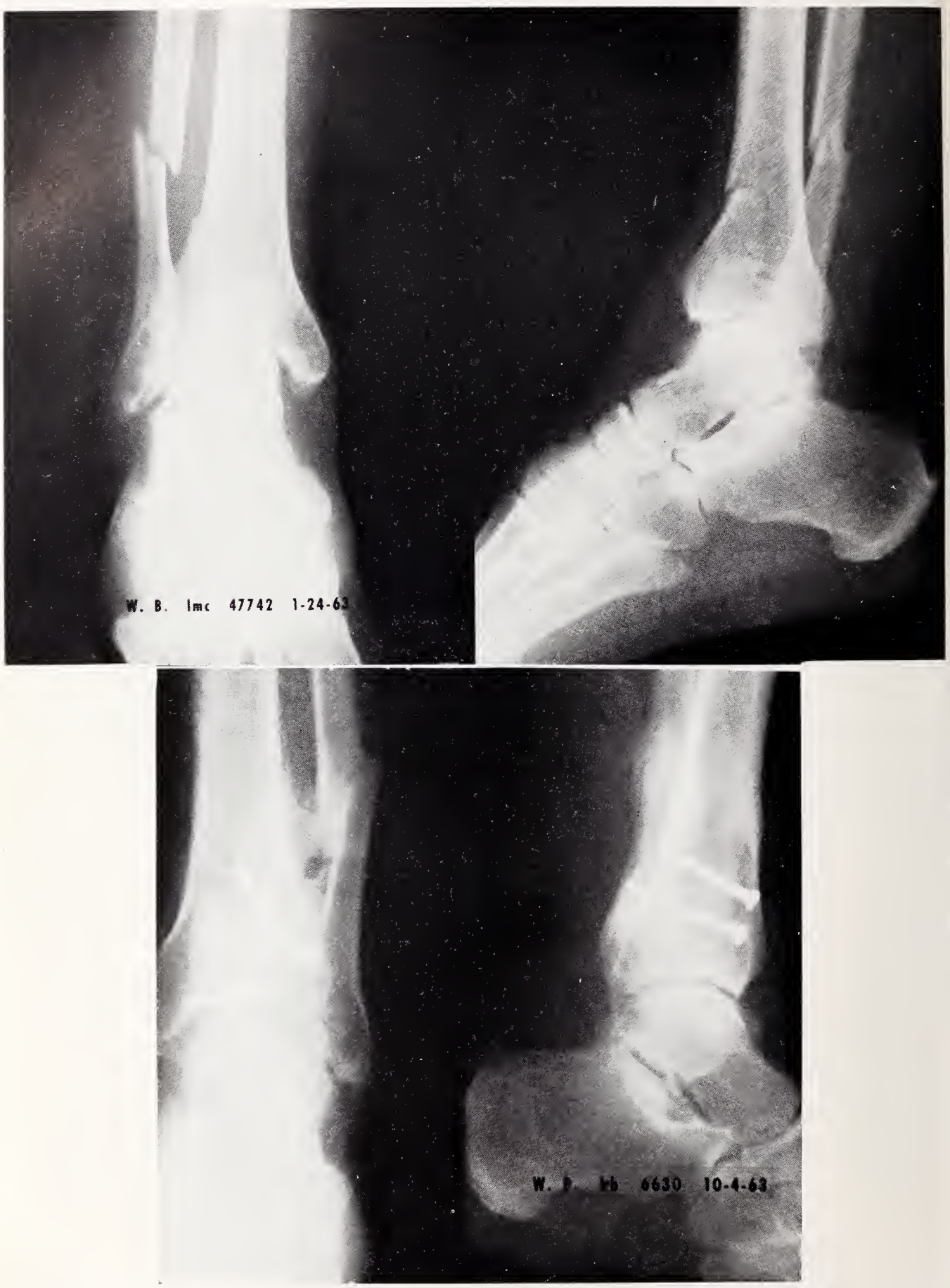


Figure 6. Open reduction of tibial joint surface.

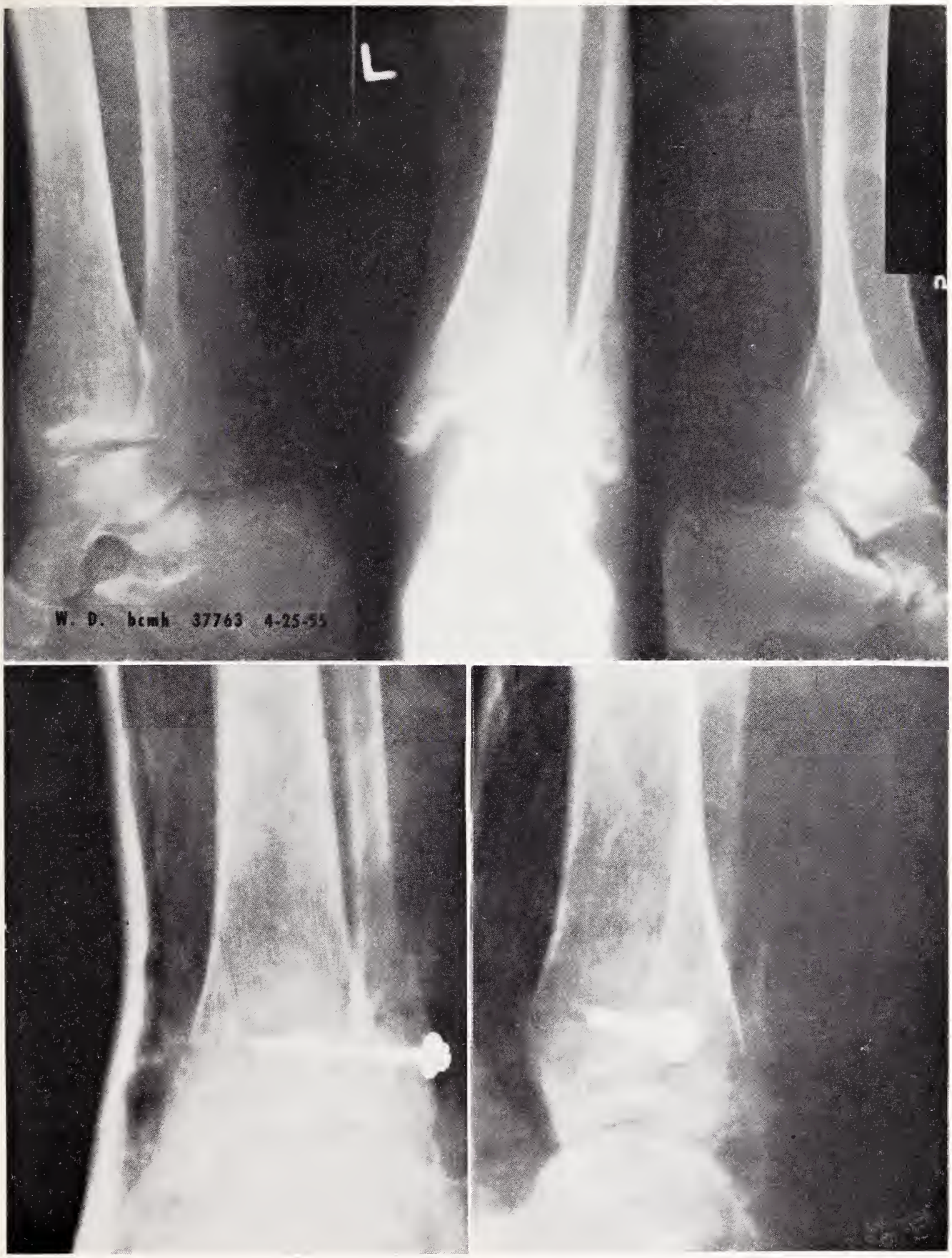


Figure 7. Open reduction of widened ankle mortise.

articular surface is often broken. Persistent displacement of this fragment, if it equals one-fourth or more of the tibial articular surface, necessitates open reduction and skeletal fixation. The anterior lip of the tibia is less often fractured, but if so, the same criteria for open reduction will apply (Figure 6).

4. *The widened mortise.* An imperfect relation of the talus to the malleoli may well be due to a separation of the lower tibio-fibular joint. Widening of the articular space between an intact medial malleolus and the talus represents a lateral shift of the talus, and necessitates open fixation of the tibio-fibular joint. When healing has occurred, the fixation screw or pin across this joint must be removed, for otherwise the functional motion will eventually loosen or break the appliance (Figure 7).

The immobilization time varies with the degree of injury. If there is no evidence of serious ligamentous damage, a fracture of one malleolus should be made to bear as much weight as the patient can tolerate after two to three weeks, and should remain in cast fixation for six weeks. An undisplaced tri-malleolar fracture requires eight weeks' time, and the final decision must depend on x-ray evidence of bone healing. A reduced tri-malleolar fracture, with its obvious associated soft-tissue damage, may demonstrate satisfactory bone union only after four to six months, and cast-fixation should be continued until that healing is demonstrable. In all instances, the presence of pain should be considered an indication of joint or fracture irritation, and weight-bearing stresses should be relieved to the comfort level through the use of additional external support by means of a cane or crutches.

Edema is to be expected following cast removal, and immediate steps are necessary to control it. The use of an elastic bandage is stressed for day-time hours. If shoe-fitting is difficult because of the degree of edema and the usual spreading of the anterior arch and toes from long use of the cast, a special shoe that laces to the toe should be obtained. Since such a shoe is looser than a regular one, a long-arch insole and inner heel wedge may be used to hasten weight-bearing. Local heat and massage are comforting, and decrease the swelling. If considerable osteoporosis has developed during the process of healing, a short leg brace with a free ankle joint prevents lateral stresses and minor traumata.

COMPLICATIONS

Traumatic arthritis is the chief late complication of ankle fractures. Deformity or non-union occurs less frequently. Any ankle-injury patient is a potential traumatic arthritic, but the degree of arthritis will be *reversely* proportional to the degree of reduction. Ankle pain following fracture can be lessened by means of an elastic bandage and a short leg-brace support, while the patient's general condition and weight excess are being corrected. From one to two years after the accident, persistent pain associated with muscle atrophy suggests a reconstructive procedure of some type, if support measures don't remedy the situation.[8, 9] Usually, the traumatic residuals are limited to the tibio-talar joint. Arthrodesis of this joint in a functional position probably will control the pain and return the patient to gainful work. If the traumatic changes extend beyond the tibio-talar joint, namely to the tarsal joints, one may include them in the surgical procedure at the same time.

CONCLUSION

As in all other fracture treatment, the goal in the reduction of ankle fractures is the anatomical replacement of all fragments and the maintenance of the replacement until healing occurs. This is not always possible, but it should be sought. "The more nearly perfect the reduction, the better the end result." Of the various methods of treatment—manipulative, pinning or open reduction—the choice should be based on the patient's age and condition, and on the physician's mechanical aptitudes and antomical knowledge.

REFERENCES

1. Dupuytren, G.: On the Injuries and Diseases of Bones (translated by F. Le Gros Clarke). London, Sydenham Society, 1847.
2. Ashhurst, A. P. C. and Bromer, R. S.: Classification and mechanism of fractures of leg bones involving ankle; based on study of 300 cases from Episcopal Hospital. Arch. of Surg., **4**:51-129, (Jan.) 1922.
3. Gray, Henry: Anatomy of the Human Body. 25th Edition, Philadelphia, Lea and Febiger, 1948, p. 327.
4. Cave, Edwin F. (Ed.): Fractures and Other Injuries. Chicago, Ill., Year Book Publishers, 1958, pp. 571-603.
5. Hamsa, W. R. and Burney, D. W., Jr.: Low tibial pin in fracture dislocations of ankle. Amer. J. of Orthop., **4**:222-223, (Sept.) 1962.
6. Sokolowski, T.: Transfissione percutanea tarso-tibiale con chiodo di Steinmann nel trattamento di fratture bimalleolari con dislocazione. Minerva Medicine, **49**:2669-2670, (Jul. 4) 1958. (Quoted by H. M. Childress)
7. Milch, H.: Fracture Surgery. New York, Paul B. Hoeber Co., 1959, pp. 429-445.
8. Speed, J. S. and Boyd, H. B.: Operative reconstruction of malunited fractures about ankle joint. J. Bone and Joint Surg., **18**:270-286, (Apr.) 1936.
9. Hamsa, W. R.: Treatment of ankle malunion; study of end results. Ann. of Surg., **110**:447-455, (Sept.) 1939.

It's your professional privilege to replenish your ranks . . .

Give to medical education through AMA-ERF

AMA-ERF

American Medical Association
Education and Research Foundation
535 N. Dearborn St., Chicago 10, Illinois

The Role of the Patient in Surgical Convalescence

FRED T. KOLOUCH, M.D., Ph.D.
Twin Falls, Idaho

During the past several years, I have used hypnotic suggestion on a large number of surgical patients as an adjunct to acceptable anesthetic and surgical technics. I reported the needs for postoperative pain-relieving drugs and hospitalization in the first 100 of them to the Western Surgical Association in 1961. Seventy-five per cent of the hospitalized patients and 95 per cent of the outpatients had simplified their surgical convalescences, as evidenced by their meager needs for postoperative pain-relieving drugs and hospitalization. Dr. Tom Throckmorton, of Des Moines, heard my paper, he seemed to go into a deep trance, and while mesmerized he invited me to review my experience for you. I was glad to accept his invitation.

What are the biological capabilities and limitations of the surgical patient? Homo sapiens is a primate mammal with a personality, and he responds as a surgical patient with both his mind and his body. He adjusts his internal environment to a traumatic, external environment. He is constantly exposed to stresses and unknowns, and his survival depends upon his integrating his personality, as well as continuously assimilating air, water and food.

He must maintain his homeostasis and stay in good repair. Both mind and body are involved, but his human personality cannot consciously affect his homeostatic mechanisms.

His personality does have characteristics that tend to interfere with his adaptation to stress. First, he has a need to be dependent. Second, he has a tendency to obey. Third, he has a need to avoid pain. Fourth, there is his desire to retreat to solitude and silence. Fifth, he wishes to avoid tension and anxiety. Sixth, he has a need to regress. Fortunately, another person can help him, on the basis of these otherwise disadvantageous personality characteristics.

When subjected to surgery, homo sapiens must adapt to iatrogenic stress consisting of physical injury and psychic threats. He then recovers, is disabled or dies, depending upon the strength of his adaptive capabilities in restoring his homeostasis and healing his wound. Actually, his adaptive capability and the surgeon's skill determine the outcome of his surgical procedure.

We surgeons are well versed in the mechanical or "garage" aspects of our trade. In surgical technic and in the metabolic care of our patients, we are conscientious, well trained, scientific and self-critical. But in the psychic and socio-economic spheres, our interest has been less profound. The varieties of convalescence and the unexplainable morbidity and mortality following even simple surgery can result from our carelessness in handling the psychic factors that are involved in our patients' adaptation to surgical stress. I refer to the unfortunate, startling, inappropriate responses such as cardiac arrest, wound infection, wound dehiscence, thromboembolic phenomena, mysterious bleeding and sudden, inexplicable death. Certainly no surgeon enjoys operating upon a patient who harbors a premonition of death. Occasionally such a patient dies. Conversely, amazing recoveries occur in some very poor-risk patients, and there are spontaneous regressions of proved cancer. These too, though unconsciously, must be cerebrally directed.

I shan't undertake to discuss the socio-economic factor as it relates to recovery, but I believe it is real and deserves future attention.

As a surgical patient, homo sapiens responds to his surgeon with both his mind and his body. Both empirical and scientific evidence indicates that the patient-surgeon interpersonal relationship can profoundly affect adaptation and recovery. Medical hypnosis is an ideal mechanism for the utilization of the therapeutic benefits of that interpersonal relationship.

THE HISTORY OF MEDICAL HYPNOSIS

Historically, hypnosis has had an undulating acceptance by physicians. Unfortunately, it had a bad start. Named after its discoverer, Dr. Anton Mesmer, it was originally known as "mesmerism." Mesmer was a competent physician who studied and used hypnotic phenomena. But he didn't understand psychodynamics, and he alienated the thinking world with his theory of animal magnetism. He thought that the phenomena produced in his patients were the result of a biological magnetic power emanating from his mind, that entered and controlled the minds of his patients. He likewise felt that this power could be transferred to

inanimate objects and made indirectly to affect his patients. A French government commission proved that no such power existed, Mesmer died in disgrace, and mesmerism fell into medical disrepute.

Subsequently, Mr. James Braid, a sceptical Manchester surgeon, concluded on the basis of critical experimentation that Mesmer's phenomena were the result of suggestion, and coined the word *neuro-hypnology* for them. The word was later contracted to *hypnology* and finally was changed to *hypnosis*.

In the pre-anesthetic era, surgeons used and wrote about hypnosis. Esdaile, a British surgeon working in India in 1845, performed 300 surgical procedures on hypnotized (mesmerized) patients. His book is a classic. The mortality rate in his hospital dropped from 50 per cent to 5 per cent. In 1846, however, ether anesthesia replaced hypnosis as a means of rendering the surgical patient immobile and unconscious. Sir Robert Liston's words at the conclusion of his first amputation under anesthesia, "Gentlemen, this Yankee dodge beats mesmerism hollow," ended surgical interest in hypnosis.

Medical and psychiatric hypnosis and suggestotherapy were popular before the turn of the century, but they died when Freud dropped hypnosis and developed his psychoanalytic technic.

Hypno-quackery, stage hypnosis and a continuing fear of the power of one mind over another have kept hypnosis in medical disrepute until recently. The resurgence of medical and surgical interest in hypnosis is probably based an the acceptance of a psychosomatic viewpoint toward disease and its treatment. The elucidation of the neurophysiology of awareness, the physiology of stress and modern experimental medical hypnosis have all contributed to a better understanding of the usefulness of the trance state in the treatment of disease.

A modern literature on purposeful suggestion and hypnosis as surgical adjuncts is accumulating. Cheek has presented convincing evidence indicating that the anesthetized surgical patient hears operating-room conversation, and records it subconsciously as suggestion. The patient then responds emotionally as though hypnotized. Threatening suggestion frightens him, but optimistic suggestion can give him confidence. The suggestions can be recalled in postanesthetic hypnotic regression. Cheek feels that many surgical complications are based on psychosomatic responses to careless operating-room conversation. Contrariwise, optimistic, purposeful suggestion can simplify surgical convalescence. His work has been confirmed by others.

THE USEFULNESS OF MEDICAL HYPNOSIS

The principal psychodynamic effect of hypnosis is to augment profoundly the inherent suggestibility of the individual in a hypnotic trance. Hypnosis offers an improved means for communication with the surgical patient. In hypnosis, the surgical patient seems to receive the surgeon's message. It assures the proper semantics so that the patient can respond satisfactorily to his traumatic experience on the basis of an accurate concept of reality.

A surgeon who would employ hypnosis must get rid of the "hocus-pocus" attitude toward it. The phenomena depend upon a dissociation of awareness as a response to suggestion—a process which probably occurs in the reticular formation of the brain stem.

By dissociating awareness and excluding unnecessary and useless perceptions, the surgical patient can use hypnosis and purposeful suggestion to simplify and shorten his postoperative convalescence. Specifically, by focusing awareness and controlling all interfering neural functions (thoughts), he hears very clearly the surgeon's description of the forthcoming surgical events and develops a true image of the procedure. This allays unnecessary uncertainty, fear and anxiety, and reduces psychogenic stress.

Ideosensory and ideomotor phenomena, in which sensation on the one hand and muscular activity on the other are controlled by suggestion, can obviously be extremely useful. Analgesia and anesthesia may be produced, reducing the need for opiates. Cataleptic immobilization of the patient or of parts of him is of great value when local anesthesia is used. Muscular relaxation comparable to that obtained with spinal or general anesthesia may be obtained. Stimulation of organic functions such as micturition and defecation can be useful.

Hypermnesia associated with the trance state is very useful in uncovering subconscious traumatic experiences related to previous surgical experiences. It enables the patient to eradicate fear, anxiety and tension that are the results of subconscious associations with the past trauma. However, the surgeon must be careful not to extend himself beyond the range of his usual professional competence in this area.

TECHNIC

During the past few years, I have offered hypnosis to many of the patients who have been referred to me for surgical care. Some of them have rejected it, either consciously or subconsciously, but to those who were willing to undergo it, I have presented it in the following fashion.

I discuss hypnosis, as I understand it, during the patient's first office visit, pointing out the theoretical advantages of purposeful suggestion in the hypnotic state. The patient learns that hypnosis can relieve his fear and anxiety concerning his surgery, elevate his pain threshold, and generally simplify and shorten his postoperative convalescence. He is asked to think about hypnosis between the first office visit and the second, and is told that induction will then be carried out. That

advance notice creates an attitude of expectancy in the patient and seems to motivate him to accept hypnosis easily.

At the next visit, hypnosis is simply and rapidly induced by an appropriate technic, depending upon the patient's age and personality. Monoideism of some sort, with suggestions of relaxation, is used in each one. The surgical patient seems to be very well motivated toward accepting hypnosis, for trance inductions are generally quite rapid, varying from 30 seconds to 10 minutes.

Suggestion is then utilized in a purposeful manner to communicate a reality image of the entire surgical procedure to the patient. A frank but optimistic presentation of morbidity and mortality follows. An estimate of the pain to be experienced is offered, and it is emphasized that this pain can be partially controlled and will be temporary. The patient is told that opiates or sedatives can be used if he feels a need for chemical pain relief.

Ideomotor questioning is used to investigate any subconscious fears of surgery that the patient may have. The patient ventilates them and is put into the proper perspective in relationship to the forthcoming surgical procedure. If he is capable, he is taught glove anesthesia and is given a posthypnotic suggestion for the transfer of this anesthesia to his operative site. He is asked to visualize himself at the conclusion of his convalescence—free from his pathology, alive and well, and rehabilitated to normal productivity. Emphasis is put upon the fact that by judiciously applying his subconscious thoughts to relaxation, pain control, and the maintenance of normal respiratory, gastrointestinal and urinary functions, he can rapidly realize his preconceived notion of his convalescence.

A posthypnotic suggestion is given him to establish a simple signal as a trance-inducer for future hypnosis, or to enable him to use autohypnosis.

The patient who is to have a general anesthetic is given the suggestion that while asleep he will not listen to any conversation in the operating room except that which is addressed to him by name.

Furthermore, he is given a posthypnotic suggestion that he will never respond to hypnosis without his consent. This suggestion protects the patient from unwarranted hypnotic experiences.

In patients about to undergo minor outpatient surgery, hypnosis is frequently induced in the operating room during the scrub time.

Patients undergoing general or regional anesthesia are frequently placed in a trance prior to the anesthetic period. The anesthesiologist uses his ordinary premedication and anesthetic technics. Generally, with local anesthesia, no premedication is used.

During the operation, care is used to keep discussion at a level unrelated to the surgical procedure. That is rather difficult at times, but the surgical team members make an attempt to refrain from discussing aspects of the surgery which would be threatening to the patient.

At the conclusion of the procedure, optimistic, purposeful suggestions consistent with an honest appraisal of the situation are offered to the patient while he is still asleep or in hypnosis. He is informed that all went well, that he will have some postoperative discomfort but that it needn't bother him, that he will be hungry for food, and that his bowels and bladder will function normally. As necessary during the postoperative period, suggestions are repeated during hypnosis to reinforce the previous subconscious instructions. Some patients use autohypnosis for postoperative relaxation.

CASE REPORTS

A few case reports will illustrate the use of hypnotic phenomena in surgical patients.

Preoperative anxiety due to fear. Irving was a very nervous 46-year-old male with a recurrent inguinal hernia. His hernia had been repaired in 1957, but had rapidly recurred and had been symptomatic for nearly four years. He had no confidence in surgery or in surgeons. He feared the prospect of another anesthetic.

He accepted the trance state very rapidly. His fear of anesthesia was explored at a subconscious level in hypnosis. He rapidly regressed to age eight, and relived a horrible, frightening experience he had had when an anesthetist and surgeon, without any prior explanation, had held him down, put him to sleep and removed his tonsils. He ventilated those fears, and awakened reassured. In hypnosis, he was given preoperative, optimistic suggestion, developing in his mind a reality image of the forthcoming anesthesia and surgery. He seemed to accept it, and entered the hospital with an attitude of confident hope.

His hernia was repaired under spinal anesthesia while he lay in the relaxed immobilization of a cataleptic, hypnotic trance. At the conclusion of his herniorrhaphy, the following postoperative suggestions were offered him. He was reassured that his hernia had been carefully repaired, that he would have some discomfort postoperatively but that it needn't bother him, that he would be hungry instead of ill, that his bowels and bladder would function normally, and that as soon as he felt capable of taking care of himself he would leave the hospital. When aroused from his trance, he awakened relaxed, refreshed and very confident. As soon as the effects of his spinal anesthetic disappeared, he was ambulatory and enjoyed a full diet. That evening he had to be catheterized once.

At his first procedure in 1957, he had required seven doses of Demerol and had spent five days in the hospital. Contrastingly, he needed just one dose of Demerol and one day in the hospital when suggestion and hypnosis were used. He was very enthusiastic about the simplification of his second

convalescence. He developed a urinary-tract infection from his one postoperative catheterization, but it was treated on an outpatient basis.

Joe was a 26-year-old, hot-rod-racing farmer with an inguinal hernia. He had a pathologic fear of surgery, and he fainted in my office while I was discussing the details of his forthcoming herniorrhaphy. In preoperative hypnosis, I was unable to unearth the subconscious basis for his fear. On the other hand, he listened carefully and developed a reality image of his surgery, and was able to undergo his operation under hypnosis and local anesthesia. He had a very uneventful postoperative recovery requiring three doses of pain-relieving drugs, and felt secure enough to leave the hospital on his first postoperative day.

The next patient, Joan, was a 24-year-old girl with a nodular non-toxic goiter. She was much disturbed about the prospects of surgery, and characterized her anxiety as "butterflies in the stomach." In a hypnotic trance she was asked to regress to the first time she experienced "butterflies." She rapidly turned back in her memory to the age of seven. "My father used to drink," she said. "I always got the butterflies then."

She was asked to accept a reality image of her surgery and current situation. Her father was dead and should no longer frighten her. She now was an adult, and shouldn't adopt a seven-year-old's attitude in responding to danger. She made a subconscious decision to put the past into its proper perspective, and to respond only to the reality of the moment. She awakened composed and confident.

She had her surgery and made a rapid recovery, requiring two doses of pain-relieving drugs and two days of postoperative hospitalization. On the third day she was carrying on her normal household duties, including the care of her three children.

Preoperative anxiety due to guilt. Anna was a 17-year-old girl who had had an illegitimate pregnancy. She had developed a torsion of an ovary, with gangrene and an accompanying small-bowel obstruction, during the seventh month of her pregnancy. The ovary and a loop of ileum had been removed, and on her second postoperative day she had delivered a dead fetus. She had had a very unhappy, painful and lengthy postoperative convalescence requiring 50 doses of pain-relieving drugs and 12 days of hospitalization, and she had continued quite depressed and unhappy. Four months later, she had developed a small-bowel obstruction due to a stenosis at the site of her previous anastomosis.

On this second occasion, hypnosis was used as an adjunct to her anesthesia and surgery. In a regression she revealed that the pain following her first surgery had been due to the loss of her baby. She felt responsible for its death. When asked to forgive herself and to accept a reality image of her situation, she did so and became a relaxed girl anxious to get well. Following the second surgery, she required 20 doses of pain-relieving drugs and left the hospital on her fifth postoperative day.

Miscellaneous case reports. One of the most gratifying areas for the use of hypnosis is in pediatric surgery. Children are excellent subjects and respond beautifully to purposeful suggestion. In some instances local anesthesia has been employed in surgical procedures that formerly required general anesthetics. Johnny was an 11-year-old boy with an undescended testicle. He had no preoperative anxiety, but the relaxation and analgesia resulting from hypnosis controlled his discomfort and gave him postoperative confidence following his orchiopexy. He had one dose of a pain-relieving drug, and left the hospital on his first postoperative day. He was riding a bicycle before the traction band had been removed from his testicle. He wanted to pole-vault on his eighth postoperative day, but I suggested he put that off for at least a month.

At the other extreme are geriatric surgical patients. Frank, an 83-year-old retired rancher had a carcinoma of the rectum. His heart had been impaired by a previous coronary occlusion, and he had a non-symptomatic enlarged prostate. He was a good subject, and utilized hypnosis for relaxation and pain control. He underwent a two-team abdominal perineal resection of the rectum and sigmoid colon, and his colostomy was functioning on his third postoperative day. His catheter was removed on the fourth postoperative day, and his bladder functioned normally. He received eight doses of pain-relieving drugs, and walked out of the hospital on his sixth postoperative day.

Blanche, a 78-year-old rest-home habitue, was disabled by the residual of a previous stroke and coronary occlusion. She had a carcinoma of the right colon. A right hemicolectomy with an end-to-end ileo-transverse colostomy was done. Adjunctive hypnosis was used. She had an uneventful recovery, required 10 doses of pain-relieving drugs, and left the hospital on her ninth postoperative day. She could have been discharged on the fifth day, but her physician preferred to keep her in the hospital a few days longer before sending her back to the rest home.

Hazel was a 40-year-old lady with a rather large nodular goiter. Initially she was skeptical of hypnosis. She felt it could be of no help to her, but she finally decided to give it a trial. She was nearly able to control her postoperative discomfort, and enjoyed solid food on her first postoperative day. She required two doses of pain-relieving drugs, and was ready to leave the hospital on her second postoperative day. Since she lived 50 miles from my office, I didn't have the courage to let her go, and it wasn't until the next day that she went back to her household duties.

Connie was a 41-year-old lady with a gastric ulcer. She had considerable preoperative anxiety, and felt that her operation would be quite dis-

abling and her convalescence prolonged. She imagined that she would be hospitalized at least 10 days or two weeks. In hypnosis, she developed a reality image of her surgery, controlled her anxiety, and developed confidence. A 75 per cent gastrectomy with a Billroth I anastomosis was done under general anesthesia. In the postoperative period she stayed very relaxed, and controlled her discomfort. Her nasal tube didn't bother her. She received five doses of pain-relieving drugs. She left the hospital on her fourth postoperative day, enjoying her diet and ready to take care of herself.

BIOLOGIC EVIDENCE OF THE PSYCHIC FACTOR IN HEALING

Actually, a scientific basis for the psychic factor in healing has been established. A considerable assortment of disciplines—psychology, psychiatry, psychosomatic medicine, medical hypnosis, neurophysiology and endocrinology—have made contributions to it. Unfortunately, the random investigations in the various fields haven't been synthesized into an understandable concept.

The patient-doctor relationship probably affects the recovery of a surgical patient on the following physiologic basis. The neuro-endocrine regulation of the adaptation to stress is under psychic influence, and can alter homeostasis and wound-healing. This thought is based on neuroanatomic, neuro-physiologic and endocrinologic facts demonstrating the presence of a general stress reflex and an axon reflex. As its stimulus, the general stress reflex has the stress and pain of the surgical injury as a sensory input. The effector output from the brain is the response which leads to repair. It depends upon intact peripheral and central nervous systems, the pituitary and the adrenal glands. It is influenced consciously and unconsciously by the brain-mind. Somehow, memories alter the effector response. There is recent evidence that memory traces may be stored in the RNA protein of the neuron, as on a tape recorder.

Homo sapiens adapts to surgical stress by means of this neuroendocrine stress reflex. Perception of the injury results from conscious cognition, and the significance of the injury is a response to unconscious processing in which the individual's present, past and anticipated experiences are influential. Somehow, memories, fear, guilt, symbols, suggestion and faith all play parts. By means of facilitation or inhibition by the ascending reticular formation, the total cerebral response leaves the hypothalamus to stimulate the anterior lobe of the pituitary and the medulla of the adrenal. The total effector output portion of the reflex determines the quantities of the end products—catecholamines, epinephrine and norepinephrine, cortisol and aldosterone—which affect the entire adaptive mechanism of the organism. Homeostasis and wound-healing are extremely sensitive to all of these substances.

The axon reflex is a local neural mechanism at the site of the surgical injury. It results in the secretion of neurokinin. This influences local pain and local vasodilatation—the so-called "flare response."

Under conditions of psychic neutrality and good personality integration, these reflexes result in proper responses which produce a minimal local flare and useful quantities of catecholamines, cortisol and aldosterone, thus insuring efficient restoration of homeostasis and wound-healing.

However, psychogenic stress generated by conscious responses to the surgical procedure and unconscious guilt, fear and anxiety, based on memories, symbols and suggestion, seems to augment the total effector output of the hypothalamus, potentiating the output of the pituitary-adrenal axis and thereby generating large quantities of catecholamines, cortisol and aldosterone. This same psychic stress also increases the neurokinin output at the axon reflex.

Excess catecholamines, cortisol and aldosterone generated by an inappropriate response have profound and deleterious effects on homeostasis in the following areas. First, water and salt are retained. Second, there is a potassium diuresis. Third, there is protein catabolism. Fourth, vasoconstriction occurs. Fifth, shock can develop. Sixth, there are increased cardiac irritability and possible arrest due to ventricular fibrillation. Seventh, increased basal-metabolic rate and oxygen needs occur. Eighth, glycogenolysis in the muscles and liver is stimulated. And ninth, there is a loss of both smooth and striated muscle tone. All of these factors can contribute to postoperative debility, complications and prolonged convalescence.

The wound is disturbed by excess neurokinin and excess cortisol. Neurokinin creates pain, edema, vasodilatation and stasis of blood. Cortisol paralzyes the migration and phagocytosis by PMN's and macrophages. It also paralyzes fibroblasts and fibroplasia.

On this basis, I am convinced that psychic factors profoundly influence the surgical patient's capacity to adapt to his iatrogenic injury, both in the restoration of homeostasis and in wound healing.

The surgeon must thoroughly understand the capabilities of his patient's mammalian body and human personality. In that way he can organize his surgical therapy to utilize the patient's survival mechanisms fully, and help him to achieve an uncomplicated and prompt postoperative recovery.

The control of the neuroendocrine stress reflex in the surgical patient is achieved by physical, chemical and psychological means. The sensory input can be minimized by precise physical and chemical management during the surgical procedure. Good surgery, safe anesthesia, gravimetric metabolic care, prevention of shock and infection, and judicious use of drugs are the foundation of surgical success. On the other hand, the adaptation

to the iatrogenic injury is profoundly influenced by the personality of the patient. Therefore, the effector output should be controlled by psychological means. At a conscious level, logical persuasion may be used, but it is generally ineffective. At the unconscious level, drug therapy and psychotherapy can affect the potent forces influencing the effector output.

To encourage an appropriate neuroendocrine stress reflex, security, confidence and well-being must replace guilt, fear and anxiety in the mind of the surgical patient. The psychotherapy for this purpose can be very simple and superficial, since the surgical procedure is a real threat, and in most instances the resultant fear doesn't require deep analytic procedures for its control. Actually, the patient can restore his own confidence and security merely by achieving a reality image of his forthcoming operation. He must have faith in his surgeon's capability and in his own adaptive potentialities.

This total attitude is the result of both conscious and unconscious mental processes. The patient consciously appraises the situation, but unconsciously he responds to memories, guilt, fears, symbols and suggestions. Through logical discussion, conscious persuasion and purposeful, optimistic suggestion, while the patient is either awake, sleeping or hypnotized, the surgeon can effectively prepare his patient for surgery. Occasionally, deep memories based on previous painful experiences must be ventilated if the patient is to erase their effects on his total emotional attitude. This he can easily do by regression under hypnosis.

CONCLUSION

In summary, a surgical experience is a psychosomatic endeavor by two people, leading to the patient's recovery. Both patient and surgeon make important contributions to the success of this biologic experiment. The patient's contribution consists of the psychic elements related to his personality—faith, suggestibility and cognition. His somatic contribution is related to the restoration of his homeostasis and the healing of his wound. There are interrelationships among all of these elements in the patient.

The surgeon's contribution consists of the art of surgery, which is related to his personality—empathy and suggestion—and to his science of surgery—knowledge, skill and experience. He must blend art and science into a whole which effectively treats the patient's mind and body. He mustn't leave the effectiveness of the factors that Beecher called the "non-specific forces" entirely to chance.

The time has come for the surgeon to understand the psychic factors in healing. These include the psychology of suggestion and hypnosis. He must remove suggestion from the art of surgery, and exploit it scientifically for his patient's benefit. He must help his patient control the psychic factors which affect the neurohumoral adaptation to the stress of surgery. The patient can then, in large measure negate his pain, restore his own homeostasis and heal his wound, thus playing his role in surgical convalescence.

The JOURNAL will supply copies of Dr. Kolouch's bibliography on request.

Bleeding From the Duodenum Caused by Adenoma of Brunner's Glands

E. J. DREW, M.D.
Des Moines

AN ADDITION TO THE large aggregation of causes for upper-gastrointestinal-tract bleeding is adenoma of Brunner's glands in the duodenum. A true adenoma of Brunner's glands is an extremely rare entity, and a review of the world's literature has brought to light only 82 or 83 reported cases. It is estimated that 70 of those were less than 1 cm. in diameter, and thus no more than 12 or 13 attained relatively large size. Recently, I encountered such a lesion, and my case will become the thirteenth or fourteenth tumor with a diameter in excess of 1 cm. to be reported.

Histology. The duodenal glands were first described by J. C. Brunner in 1688. According to GRAY'S ANTOMY, these glands are limited to the duodenum and are most conspicuous in the submucosal areolar tissue. Near the pylorus, they form a complete layer in the superior portion and in the upper half of the descending portions of the duodenum. As one proceeds distally, the glands tend to disappear and they are never found in the jejunum. Histologically, they are small compound acinotubular structures consisting of a number of alveoli lined by short columnar epithelium, and they communicate with the inner surface of the intestine through a single duct.

Etiology. Tumors of Brunner's glands could be caused by chronic inflammation, since the tissue is often infiltrated by lymphocytic cells. However, no specific cause has ever been established for them.

Incidence. Many of these tumors are found incidentally during routine autopsy, and as far as one can ascertain, no symptoms have been caused. Feldman, following a study of 1,319 autopsies, reported one case of adenoma of Brunner's glands and three cysts of Brunner's glands. All of the tumors so far reported have been benign, except for one that Christie found in 1953 and reported as being an adenocarcinoma.

The first reported tumor of the duodenum was credited to Cruveilhier in 1835. It isn't possible to determine whether or not it was a tumor of Brunner's glands. Salvoli is said to have given the first description of a tumor of Brunner's glands, in 1876. Weishaupt described a pea-sized tumor of this sort that he found in an 11-day-old girl at autopsy. The 70 reported cases of tumor measuring 1 cm. or less in diameter might be classified as representing hyperplasia, rather than true tumors of Brunner's glands.

Symptomatology. The symptoms of adenoma of Brunner's glands tend to mimic those of gallbladder disease and peptic ulcer. One might have melena, ulcer-like distress or motor disturbances. There seems to be a high degree of ulceration on the body of the adenoma, resulting in profuse hemorrhage. A vast majority of patients complain of epigastric distress. Likewise, many have no symptoms referable to the adenoma, and the disorder in such cases is found only in the course of routine autopsy.

Diagnosis. In recent years, x-ray studies of the duodenum have shown a filling defect in the first portion of it. The tumor can be pedunculated or sessile. Final diagnosis, of course, awaits surgical removal.

Pathology. In the analysis of duodenal tumors, Hoffman and Grayzel found the pathologies of the tumors to have been as follows: adenoma, 31.8 per cent; myoma, 16.7 per cent; pancreatic rests, 12.1 per cent; and adenomas arising in Brunner's glands, approximately 10.6 per cent. The remainder were single examples of fibroma, lipoma and hemangioma. Adenomas of Brunner's glands are usually sessile, and not pedunculated. They rarely measure over 10 mm. in diameter. Microscopic study shows an orderly arrangement of glands lined by columnar cells having an abundant, pale and finely-granular cytoplasm. Histologically, Brunner's glands resemble the gastric glands of the pylorus.

The treatment for adenoma of Brunner's glands is surgical removal. Any case of massive upper-gastrointestinal-tract bleeding must be diagnosed as swiftly as possible, and adenoma of Brunner's glands should be considered in the differential diagnosis.

CASE REPORT

A 48-year-old female was admitted to the hospital on February 25, 1962, complaining of weakness and of "pulsations in the head." She had noticed increasing weakness and paleness for approximately two weeks, with some loss of appetite. On closer questioning, she stated that her bowel movements had been tarry for several days, although she hadn't noted any diarrhea. In the patient's medical history, it was established that she had had a cholecystectomy, appendectomy and tubal ligation. She was markedly obese, and had developed a large ventral hernia subsequent to the removal of her gallbladder. Her family history was noncontributory, except for the fact that she had six children, all of whom were alive and well.

Physical examination was negative except for the obesity and the enormous ventral hernia. The patient weighed approximately 300 lbs., and her hematocrit on admission was 22, with a hemoglobin of 7.7 Gm. A more detailed inquiry into her present illness failed to establish any history of an ulcer, although she had had some indigestion associated with flatulence. A medical consultant who saw her felt that the most logical diagnosis was duodenal ulcer, and appropriate medical therapy was instituted. X-ray studies were commenced about a week following admission, and the radiologist noticed a conspicuous filling defect in the descending portion of the duodenum. The possibilities that he thought should be considered in the differential diagnosis were hemartoma, leiomyoma, cyst, lymphoma and carcinoma.

The patient was seen in surgical consultation, and an exploratory celiotomy was performed on March 14, 1962. A large transverse incision was made over the ventral hernia, in the right hypochondrium of the abdomen, and many dense adhesions were encountered between the transverse colon and the liver. Likewise, there were many adhesions attaching the stomach, duodenum and liver. All of those were freed without too much difficulty.

An incision was made in the anterior portion of the second part of the duodenum, and a tumor about 7 cm. in length and about 3 or 4 cm. in width was delivered through an aperture in the duodenum. It appeared to arise from the base of the anterior duodenal wall about 2 cm. distal to the pylorus. The tumor was excised, and the base was closed with a continuous suture of catgut. The rent in the anterior duodenal wall was closed in the conventional manner, and the ventral hernia was repaired with heavy wire sutures. The patient's convalescence was uneventful, and she was discharged on her ninth postoperative day.

Pathology: The pathologist reported that the specimen consisted of an irregularly lobulated mass measuring 4½ x 3 x 2½ cm. It was completely covered by mucosal surface, except at the base where the mucosa had a granular appearance. In

several areas there was superficial erosion, with small foci of hemorrhage.

Microscopically, the tumor in the duodenum was covered by mucosa that in many places was markedly thin. In some areas there was evidence of recent hemorrhage. The tumor was divided into lobules by bands of fibrous connective tissue in which there was some lymphocytic infiltration. In some areas the glands appeared morphologically similar to Brunner's glands, and in other places the glands lining the cells were more flattened. The final diagnosis was adenoma of Brunner's glands.

SUMMARY

This is the thirteenth case in the world's literature of an adenoma of Brunner's glands measuring more than 1 cm. in diameter. Approximately 70 cases of lesions less than 10 mm. in diameter have been reported.

Adenoma of Brunner's glands should be seriously considered as a cause of upper-intestinal-tract bleeding, and appropriate therapy should be recommended when the diagnosis has been confirmed. The likelihood of malignancy is very remote.

REFERENCES

1. Feldman, M.: Brunner's glands tumors of duodenum. Amer. J. Gastroenterol., **29**:651-656, (June) 1958.
2. Stephens, G. L. and Harbrecht, P. J.: Bleeding Brunner gland adenoma of duodenum, simulating duodenal ulcer; a case report. Ann. Surg., **148**:845-850 (Nov.) 1958.
3. Rienhoff, W. F., III: Adenoma of Brunner's gland. Southern Med. J., **56**:1381-1383, (Dec.) 1963.
4. Hudson, G. W. and Ingram, M. D., Jr.: Adenoma of Brunner's glands. Amer. J. Roentgenol., **67**:777-780, (May) 1952.
5. Deren, M. D. and Henry, P. D.: Adenoma of Brunner's glands. Ann. Int. Med., **44**:180-187, (Jan.) 1956.
6. Holt, W. S. and Kennard, G. K.: Adenoma of Brunner's glands: case report. Missouri Med., **59**:35-37, (Jan.) 1962.
7. Silverman, Lloyd, Waugh, J. M., Huizenga, K. A. and Harrison, E. G., Jr.: Large adenomatous polyp of Brunner's glands. Amer. J. Clin. Path., **36**:438-443, (Nov.) 1961.
8. Elliott, R. L. and Dalton, M. L., Jr.: Brunner's gland adenoma mimicking duodenal ulcer hemorrhage. Amer. Surg., **30**:65-68, (Jan.) 1964.
9. Brunner, J. C.: De Glandolis in Intestino Duodoni Hominis Dectis. Dissertation, Heidelberg, 1688.
10. Lambert, Avery E.: Guide to Study of Histology and Microscopic Anatomy. Philadelphia, P. Blakiston & Son Co., 1930, p. 110.

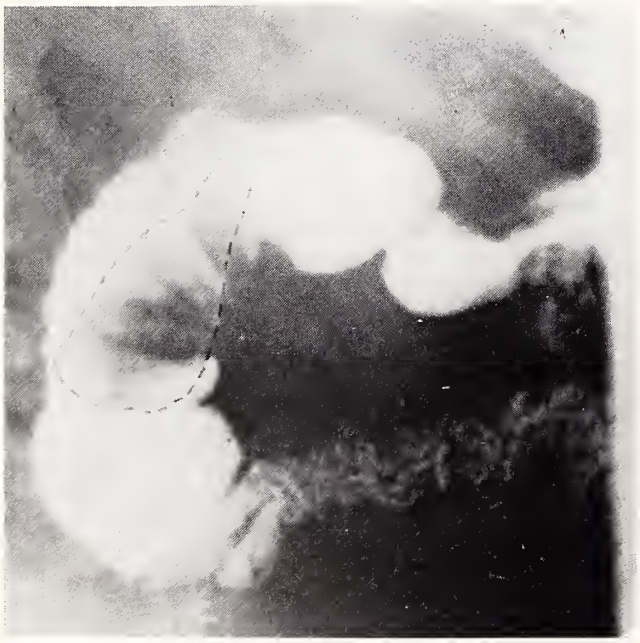


Figure 1. Radiograph showing large filling defect in descending portion of duodenum measuring 7 cm. in length, and 3 cm. in width.

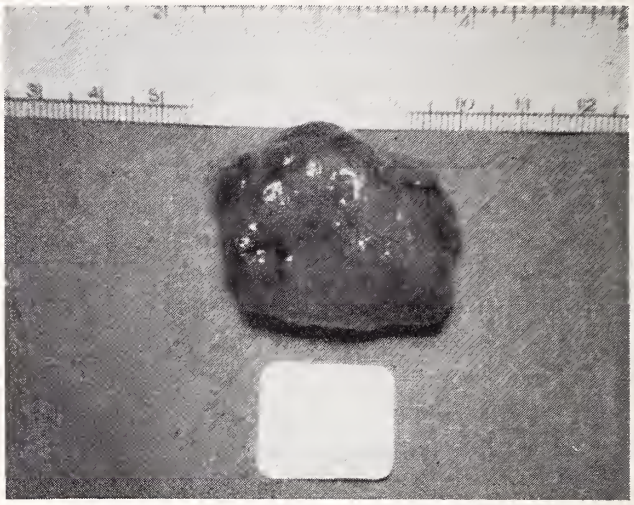


Figure 2. Photograph of tumor of Brunner's glands.

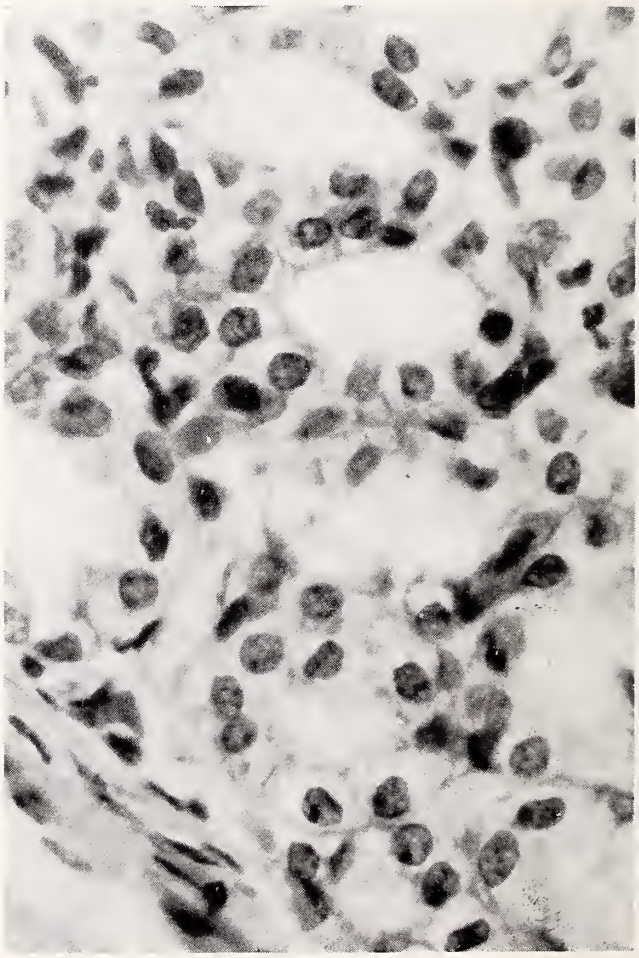


Figure 3. Photomicrograph of adenoma of Brunner's glands. Note mucous secreting epithelial cells with granular cytoplasm and basal nuclei.

University of Iowa
College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 46-YEAR-OLD WHITE MOTHER of seven children had awakened one morning to find that her left thumb had assumed a flexed and abducted position, and that she couldn't actively move it back into a normal position. Three weeks later, she noticed that her two middle fingers had begun to assume flexed positions at the interphalangeal joints. The same process had occurred in her other two fingers during the following two weeks. At that time she had noticed that her hands were weak, the left more than the right. She couldn't carry on her daily household tasks and was unable to play the piano.

She had then consulted her physician, and he had told her that she probably had arthritis and had given her some type of medication. Three months after her first visit to her physician, she had burned her hand with hot coffee and the burns had become infected. On a subsequent visit to her physician, she had been found to have a blood pressure of 180 mm. Hg, and it had then been assumed that she might have incurred a cerebrovascular accident. Medications for high blood pressure had then been prescribed. However, two weeks before her admission to the hospital, the same process had begun in her right hand, and upon further interrogation she reported having developed speech and swallowing difficulties a short time after the trouble had begun in her hand. She had frequently choked while swallowing food.

The patient was admitted to the University Hospitals nine months after the onset of her symptoms. At that time, all of her fingers and the thumb of her left hand were flexed at the interphalangeal joints, and the index finger of her right hand was also flexed. The intrinsic muscles of her hands were atrophic and weak. Similar findings were present in the other skeletal muscles. Fasciculations were seen in the left-biceps brachii. There was no impairment of sensation. The myotatic reflexes were hyperreactive. The pupils were equal, and they reacted to light and accommodation. The extraocular movements were normal. The chest had a reduced expansion, but was clear to percussion and auscultation. The heart was normal to percussion and auscultation. The blood pressure was 140/80 mm. Hg, and the pulse rate was 80/min. The abdomen revealed no tenderness or masses. Dysmetria was present on a finger-to-nose test, but the patient was not ataxic. The deep tendon reflexes were hyperactive and symmetrical except for the ankle jerks, which were absent. Hoffmann's and plantars were absent, and there was no ankle clonus. The patient's gait was shuffling, and she rose from a squatting position with difficulty. She couldn't walk on her heels, and could barely rise on her toes.

The urine was clear to chemical and microscopic examination. The blood hemoglobin level was 14.3 Gm./100 ml., and the white blood cell count was 9,000 per cu. mm., with a normal peripheral blood smear. Spinal fluid was clear and had an opening pressure of 160 mm. H_2O, a trace of globulin, 55 mg. per cent sugar, and 40 mg. per cent protein. The gold chloride test result was 11112111000. A serologic test for syphilis was negative. Blood urea nitrogen and creatinine levels were normal, and the serum albumin was 3.7 Gm. per cent, with a globulin of 3.6 Gm. per cent. A fasting blood sugar was 76 mg. per cent, and a protein-bound iodine was 5.5 mcg. per cent. Roentgenographic examinations of the chest, cervical spine and skull were interpreted as normal. Electromyography revealed normal motor conduction time in the left median, left ulnar, right median and right perineal nerves. A test with edrophonium chloride (Tensilon) was negative. Shortly thereafter, she was discharged.

Following her discharge, the atrophy and weakness progressed until she was confined to bed. She was receiving feedings through a nasogastric tube at the time of her last admission to the University Hospitals seven months later.

At that time, her blood pressure was 134/90 mm. Hg, and her heart rate was 90/min. and regular. She was very emaciated. Severe dysarthria hampered communication, but she seemed mentally alert. The pupils were round, equal and adequately responsive to light. No paresis of the extraocular muscles was noted. There was bilateral weakness of the muscles controlling facial expression, and the tongue was atrophic. Severe atrophy and weakness of other skeletal muscles was present. She couldn't move her extremities against gravity. Fasciculations were not seen. No sensory loss was

elicited. The myotatic reflexes were symmetrically hyperactive. There was no response to plantar stimulation.

The blood hemoglobin level was 12.7 Gm. per cent, and the white blood cell count was 4,150/cu. mm. The sedimentation rate was 41 mm./hr. A venous glucose tolerance test showed a fasting blood sugar of 107 mg. per cent. The values for one half, one, one and a half, and two hours were 132, 132, 136, and 137 mg. per cent, respectively. The total serum protein was 6.6 Gm. per cent, with a serum albumin of 3.6 Gm. per cent and a serum globulin of 3.0 Gm. per cent. The motor conduction velocity of the right ulnar nerve was 47 meters per second. The motor-nerve conduction velocities of other nerves couldn't be obtained because of the extensive atrophy of the small hand muscles. The sensory conduction velocities were normal.

The patient's weakness progressed until she was unable to move in bed. She died one month later, after four hours of severe respiratory distress.

CLINICAL DISCUSSION

Dr. Maurice W. VanAllen, Neurology: Mr. Croxdale will speak for the students.

Mr. M. Croxdale, junior ward clerk: From the picture presented in the protocol, it is evident that we are dealing with three components: (1) anterior-horn cell disease, indicated by the development of the simian hand; (2) upper motor neuron damage due to hyperreflexia; and (3) probably a bulbar component, manifested by a swallowing and speech difficulty. The other important points in the protocol are the negative laboratory tests, except for the glucose tolerance curve which probably can be explained by the patient's depleted nutritional state at the time the test was done. The decreased conduction velocities of the motor components in the nerves should also be mentioned.

We believe the patient's disease was amyotrophic lateral sclerosis. Several considerations led us to that diagnosis: (1) The disease was rapid and progressive, with death occurring in 17 months. (2) The symptoms included weakness of the hands and arms, bulbar signs and weakness of the legs. (3) There was no pain. (4) The hand and other skeletal muscles atrophied. (5) Fasciculations were noted at one time, and the involvement was first found in the distal part of the hand. The reflexes were hyperactive. No sensory disturbances were noted at any time, and there was a paucity of positive laboratory findings.

There are a few points that led us to doubt that diagnosis somewhat. The disease was unilateral in its early phase, whereas it usually is bilateral at first. There were no diffuse fasciculations such as one might expect, and there was no Babinski sign, though it is quite frequently present.

The differential diagnosis includes a few conditions that I shall run through quickly. Cervical cord tumor was ruled out because there was no root pain and there was no block in the spinal canal, although the protocol failed to state whether a Queckenstedt test was performed. Syringomyelia was strongly considered, but pain and temperature sensation are usually lost early in that disease. Hernia of the cervical disc might be considered, but again no pain was present. Myasthenia gravis was ruled out by a negative edrophonium test. Chronic anterior poliomyelitis was ruled out by the hyperactive reflexes.

Here, then, are the pathologic changes which we expect will be reported: loss of cells in the anterior horns of C5, and possibly of C6 and C7, with a glial response; the same changes in the hypoglossal and facial nuclei; demyelinization and loss of axis cylinders in the pyramidal tracts; possibly a loss of Betz cells; and muscular atrophy and other changes relating to the musculoskeletal system, such as osteoporosis.

Dr. VanAllen: Before we go further, I'd like to correct an error. In progressive muscular atrophy or amyotrophic lateral sclerosis, a *unilateral* onset is common.

Dr. Fincham, will you proceed with your analysis of this case?

Dr. Richard W. Fincham, Neurology: I'd like to mention that the nerve-conduction studies showed *normal* velocity.

Basically, we are confronted with a progressive paretic disturbance involving bulbar and peripheral musculature. There may have been a sudden onset of dysfunction, since we are told that the patient became aware quite abruptly, one morning, of dysfunction in her left upper extremity, but no one has referred to it, at any time, as a stroke episode. Basically, then, we are confronted with a slow, definitely progressive wasting disorder. Significantly, the patient never voiced complaints in terms of subjective sensory dysfunction. In addition, she didn't complain of pain. Sphincteric functions remained intact. At no time was there any significant difficulty from a persistent fever, aside from the one occasioned by the respiratory infections which were a part of the terminal illness. There was no history of toxins. No evidence of a primary malignancy was obtained from the physical or laboratory findings.

A significant physical finding noted during the evaluations was a very profound degree of muscle atrophy. Yet, despite this marked wasting, the tendon reflexes remained hyperactive, and the sensation remained intact. These facts, plus the definite dysphagia and dysarthria that were a part of the illness, indicated both upper- and lower-motor-neuron disturbances.

The laboratory findings weren't positive in any definite diagnostic sense. The electrical studies that I intend mentioning a little later tended to confirm a central neurogenic paresis. A Tensilon test, performed early in the course of the patient's illness when atrophy wasn't yet a marked part of

her difficulty, helped rule out the possibility of myasthenia gravis.

I think the polymyositic syndrome is the most prominent differential consideration. It presents with muscle wasting and weakness, with intact sensation and with intact reflexes. These findings are similar to those shown by our patient. The syndrome may present as an acute, fulminant situation, with fever, considerable muscle pain, and a progressive downhill course leading to death. Bulbar difficulties aren't at all uncommon in polymyositic syndromes.

Polymyositis may have a chronic course, in which there is mainly proximal muscle weakness with, perhaps, some muscle tenderness. The laboratory tests may show elevations in serum enzymes —in particular, aldolase and glutamic-oxalacetic-transaminase values. The sedimentation rate may be elevated. These findings, however, aren't invariably present. The electromyograph may be of help in further establishing the diagnosis of polymyositic syndrome.

Polymyositis may occur by itself, or it may be a part of a collagen disorder. It may come with systemic lupus, with dermatomyositis or scleroderma. As we have already mentioned, the patient had never had significant fever, and as you have noted from the protocol, there was no problem with proteinuria or hematuria. Since she seems not to have had Raynaud's phenomena dermatitis or arthritic difficulties, a systemic collagen disorder is unlikely to have been a part of her illness. Her minimally elevated sedimentation rate was taken during her terminal course, at the time when she was having significant pulmonary difficulties. Carcinoma may be present with the polymyositis syndrome, but again there is no clear history to suggest a primary malignancy, and there were no subsequent findings to support such a possibility.

I feel that the patient did not have polymyositis. The most prominent of my reasons is that severe, general, diffuse atrophy was apparent. Ordinarily, polymyositis brings a disproportionate amount of weakness in consequence of atrophic changes. In addition, the tendon reflexes were hyperactive, a finding that suggests corticospinal-tract involvement. For these reasons, and from the fact that we never were able to identify any of the other associated illnesses, I feel that polymyositis can be ruled out.

Polyneuritis is another possibility, but with the clinical history and the physical appraisal, one can rule it out because of the patient's normal sensory function and active tendon reflexes. In addition, nerve-conduction studies showed no slowing.

Syringomyelia has been mentioned as another possibility. It would have had to be located in the cervical and medullary regions as well as in the lumbar cord in order to account for the lower-motor-neuron changes that were present in the patient's lower extremities. Again, this lady had intact sensory function. There was no evidence of pain-temperature dissociation, which is so characteristic of that condition. Thus, I think the diagnosis of syringomyelia can be set aside.

Multiple sclerosis is not a good prospect, in view of the fact that the patient had no sensory difficulties and no sphincter problems, expressed no history suggesting visual difficulties, and provided no history suggesting exacerbations and remissions of motor and sensory symptoms.

The possibility of myasthenia gravis has been mentioned. It was ruled out early in the course of the patient's illness by the Tensilon test, and later by the marked atrophy. One might also consider a high-cervical or foramen-magnum tumor, producing bulbar signs and lower-extremity difficulty. Again, there was no history or physical evidence of sensory changes. The cervical-spine films were not remarkable for erosive changes. Infections were never prominently noted in the history as having antedated the patient's terminal difficulties or as forming a significant, progressive part of her illness.

From the above physical and historical considerations, and in view of the laboratory findings, I think the most likely diagnosis must be that of amyotrophic lateral sclerosis.

Dr. VanAllen: Thank you, Dr. Fincham. The clinicians expressed a unanimous view that the patient was suffering from amyotrophic lateral sclerosis, motor-neuron disease or, as it is now called, motor-system disease. I shall ask for the pathologic data before inviting further discussion. Dr. Stamler, will you proceed, please?

Dr. Frederic W. Stamler, Pathology: I have nothing contradictory to offer. From a pathologic standpoint, this was a case of amyotrophic lateral sclerosis with very typical findings.

This disease has been characterized as one that affects the motor neurons. From the pathologic standpoint, there is a gradual or fairly rapid degeneration or disappearance of motor neurons, including the upper motor neurons of the cerebral cortex and the lower motor neurons of the cord. In the end stages—and usually this disease is examined histologically in the end stage—the picture is that of disappearance of large numbers of these cells, the distribution of the lesion correlating with the clinical evidence of motor-neuron disease. With the drop-out of motor neurons, there is a concomitant degeneration and disappearance of the myelinated nerve fibers from these cells, so that the other conspicuous finding in the brain stem and cord is myelin-loss, especially involving the corticospinal pathways. Also, of course, there are atrophy and demyelinization of the peripheral motor nerves, and denervation atrophy of the skeletal muscles. The distribution of lesions correlates with the clinical pattern of the disease.

As to the exact nature of this nerve disease, we really are pretty much in the dark. Various authors have described anatomical changes occurring in the motor nerve cells, early degenerative changes

followed by more profound changes, and finally a complete disappearance of those cells. Those changes aren't very specific, and are difficult to distinguish from those which apparently occur in a slow, gradual way during the normal aging process. In the late stages of the disease, with severe respiratory involvement, the effects of anoxia and metabolic or nutritional disturbances may be added to the primary disease process.

Another difficulty in evaluating the disease is that when the cells disappear, they leave little trace behind. The process of cell disintegration isn't accompanied by any very noticeable inflammatory reaction, except for a mild gliosis. The severity of the lesion is usually judged on the basis of degenerative changes seen in the remaining cells, and the fact that fewer than the normal number of cells are present. This latter, however, is a rather difficult matter to judge, in many instances. There is no specific number of cells that one normally sees in a section of the cord, and the number depends a great deal on the level from which the section is taken. There is an appreciable segmental clustering of cells, so that two sections taken a few tenths of a millimeter apart may vary greatly in their cell content. The same is true, I think, of the difficulty in evaluating the motor cortex. Except for these reservations, however, I think I can say that in this case a profound loss of cells occurred.

In this patient, motor neurons were greatly depleted in numbers throughout all levels of the cord, and most of those remaining showed degenerative changes such as excessive lipochrome deposits, abnormal patterns of Nissl substance, and nuclear pyknosis. Some degenerative cells appeared as structureless hyaline masses. Similar changes were seen in the large motor cells of the cerebral motor cortex. The process of degeneration wasn't entirely confined to the motor neuron system, as evidenced by the fact that cells of the substantia nigra showed cytoplasmic bodies and cell disruption similar to the changes that I have described.

Myelin stains of the cord showed preservation of the sensory pathways, with conspicuous loss of large myelinated fibers of the corticospinal tracts and other motor pathways, and with accompanying loss of myelinated fibers of the anterior spinal nerve roots and peripheral motor nerves. There was profound denervation atrophy of skeletal muscle, especially of the intercostal muscles.

Terminally, the patient developed pneumonia, and it added to her respiratory disability. I am sure it was the immediate cause of her death. There were a few incidental findings such as chronic cholecystitis, with cholecystolithiasis. There was a Ghon complex of the right lower lung lobe, with no evidence of active tuberculosis. I mention this because tuberculosis has been one of the many diseases considered in attempts at providing an etiology for motor-neuron disease, but there was very little evidence of such a causation in this case.

Dr. VanAllen: Thank you very much, Dr. Stamler. Yours is a very nice pathologic representation of the disease, and it correlates precisely with the clinical findings.

In 1969 we shall be able to "celebrate" the hundredth anniversary of Charcot's first description of this disorder. I doubt that we'll have much to celebrate unless some additional discoveries about it are made rather soon, for like many other conditions such as atherosclerosis, not much more is known about amyotrophic lateral sclerosis and its pathogenesis than was reported originally. But we shall hope for the best.

There have been some new insights into the disorder which have come from clinical and pathologic studies of other diseases to which increasing attention has been given in the past few years. Dr. Sahs, do you have some comments?

Dr. Adolph L. Sahs, Neurology: I think most of you are familiar with the observation that in Guam the incidence of this disorder or allied entities is very high. Indeed it is now estimated that 10 per cent of the Chamorro group of people on Guam die from amyotrophic lateral sclerosis. Thus epidemiologists and others have had an opportunity to look for some cause, either genetic or toxic, which may be responsible for the disease. Apparently the disease in Guam is a true amyotrophic lateral sclerosis such as we see sporadically in this country.

I'm sure you noted, in the microscopic sections and myelin-sheath stains, that this isn't a disease merely of the anterior-horn cells and corticospinal tracts. The entire area, starting from one posterior horn and extending around to the opposing posterior horn, is affected. I think most of us feel that this is a disease that affects the neurons in many areas. True, it tends to concentrate in the anterior horns, and usually the disease moves so rapidly in the anterior-horn areas that other findings are minimal by comparison. But Dr. Stamler has shown you that the substantia nigra was involved, and if you carry this concept into other areas, you find that if the patient survives, the Betz cells will be affected rather severely, and that cells in many other portions of the brain will be involved. Therefore, I think it is fair to say that this is a diffuse disease, and that the reason we don't see more involvement of other areas is that the patient usually fails to survive long enough for those changes to develop. Usually, he lives approximately 18 months after the onset of bulbar difficulties. In this instance, I believe, the patient lived 17 months.

Now, are there any clues? This picture has been described as a complication of diabetes mellitus. That observation doesn't help us very much in trying to determine the etiology. The Scandinavians have reported gastric resection, and others

have reported hypoglycemia as a possible cause of this condition. The disease—or a disease very similar to it—has been found following mercury poisoning, but it seems rather unlikely that anything of that sort occurred in this particular instance. There are other drugs which may possibly be responsible. I believe, however, that the intranuclear inclusions such as Dr. Stamler demonstrated to you in the substantia nigra should be kept in mind here. It is entirely possible that some type of low-grade infection is present, and that the so-called Lewey bodies actually mean something. As you know, this disease has been reported as chronic anterior poliomyelitis by many authors, and it seems to me that such a possibility shouldn't be disregarded.

Dr. VanAllen: Dr. Fincham, you performed nerve-conduction studies and electromyography on this patient and on a number of others with this disorder, as well as other conditions. What was found? Were the nerve-conduction velocities normal?

Dr. Fincham: A combination of EMG and nerve-conduction tests may be helpful in pinpointing the site of pathologic changes in various neuromuscular disorders. It is of value primarily, I think, in checking the clinicians' diagnostic impression. In this particular instance, we are concerned with a wasting disease. Very obviously, the patient was losing muscle tissue, and was losing it progressively. The question arose as to whether she had a primary myogenic or neurogenic process. The electromyograph was helpful in this regard. The patient showed active fibrillation in all of the extremities tested, and that finding supported a diagnosis of a neurogenic process. Another question rose: Was this neurogenic process based upon a peripheral neuritis, or was it a central anterior-horn-cell type of disturbance? Nerve-conduction studies were of help in that regard, for they were normal, thus indicating a central type of disturbance such as one has in anterior-horn-cell disease. If nerve-conduction velocities had slowed, they would have suggested a peripheral neuropathy. This lady, when her conduction velocities were measurable, showed values that were within normal limits. In addition, normal sensory-nerve testing was completed. This permits electrical demonstration of the preservation of sensation that is well known clinically. These tests provided additional documentation of the clinical findings of motor-neuron disease.

Dr. VanAllen: Thank you, Dr. Fincham. We have used the nerve conduction velocity studies when problems were not so clear clinically. The remaining motor fibers seemed to be healthy and able to conduct impulses at a normal or very nearly normal rate. It is rather striking that one can find a normally conducting sensory axon despite the wasting and paralysis of the extremity.

One feature that we might devote a few moments to concerns the wasting and various other disorders associated with carcinoma. Sometimes they precede the appearance of the primary malignancy, and they can represent very confusing clinical syndromes. Dr. Joynt, you have been interested in these. Would you care to comment on them?

Dr. Robert J. Joynt, Neurology: Carcinoma can affect the various portions of the neuromuscular system and thus mimic this disorder. It can affect the peripheral nerves, primarily in the motor elements, so as to present a picture similar to that seen in this patient. Also, a myositic or myopathic type of process is seen in patients with carcinoma, and there may be difficulty in distinguishing these muscle disorders from an amyotrophic-like picture. Then too, it has been shown in a few patients with carcinoma that there is anterior-horn-cell damage along with nerve involvement and muscle involvement. All of these in conjunction may simulate amyotrophy.

So, occasionally, the picture of wasting and atrophy of muscles can be encountered in carcinoma patients. They aren't related to the spread of the carcinoma itself so as directly to involve the nerves. Instead, they represent some metabolic or autoimmune process that goes on in a patient with carcinoma. Thus, this is one possibility that we must keep in mind when a patient presents with an amyotrophic-like picture.

Dr. VanAllen: Not all of the clinical cases of this disorder present in the fairly standard fashion of atrophy of the hand muscles on both sides, then bulbar symptoms, hyperreflexia, and a rapid downhill course. Some of them begin with a lateral sclerosis or progressive muscular atrophy. There may be considerably more difficulty in differential diagnosis. Sometimes the disease starts with a rather long-persisting, slowly progressive atrophy of a hand, or with symptoms in the legs—for example, foot-drop. Dr. Sahs, will you comment on some of the differential-diagnostic features and difficulties in these less-common clinical presentations?

Dr. Sahs: A spastic difficulty requires that we include a number of conditions in the differential diagnosis. These include tumors and the other disorders that have been mentioned. However, our most difficult problems have been in patients whose initial symptom is foot-drop, such as Dr. VanAllen indicated, rather than with atrophy or wasting of the hands. I remember one of our patients who went along for about nine years before developing the typical clinical findings of this disease. He had a foot-drop for about six months before anything else became evident. Thus, certain of these patients exhibit initial signs in the lower extremities, either as spastic difficulty or as motor weakness. In that area it may present many problems, but I think we should remember that this disease seldom, if ever, affects the sphinc-

ters of the urinary bladder or bowels. That point is a useful one to know.

Dr. VanAllen: About 10 years ago it was found that in this disease, as well as in other denervating disorders, the peripheral neurons may branch and supply denervated muscles. Peripherally, denervation and renervation are going on. Thus, function is preserved for as long as possible, and relatively few anterior-horn cells may carry a considerable load in terms of the total new motor units, so to speak. This feature has also been interesting in connection with the fact that some people who have had poliomyelitis may later present a picture of progressive atrophy with fasciculations. Consequently we may ask ourselves whether this disorder is some complication of poliomyelitis or of some other viral disease, or whether the late degeneration in poliomyelitis may mean that some of the overworked anterior-horn cells have ceased functioning for some other reason—perhaps age—and having assumed the tasks of so many muscle fibers, they suffer a further loss of function when they do start to disintegrate.

At a symposium on this subject several years ago, someone raised a question as to whether there may be anything to fear from mass inoculations with live poliomyelitis vaccine, in terms of a later development of progressive motor-neuron disease in the inoculated individuals. There has been nothing to substantiate such a fear, and I'm not trying to frighten anyone who has taken the vaccine, but the possibility is interesting because there really is no clear insight, at the moment, into the cause of amyotrophic lateral sclerosis.

Are there any questions?

Student: Are the extraocular muscles affected?

Dr. VanAllen: Almost never.

Dr. Henry E. Hamilton, Internal Medicine: Are there any auto-antibodies in the sera of the patient which attach themselves, say, to the neurons?

Dr. VanAllen: I'm not aware of any studies in that regard. We have been checking the poliomyelitis titers of the patients with amyotrophic lateral sclerosis, and I believe most of them do have titers and most of them have had inoculations. As to other etiologic studies, I'm not aware of any that would bear scientific scrutiny.

SUMMARY OF NECROPSY FINDINGS

Amyotrophic lateral sclerosis, severe, with emaciation
Lobular pneumonia, left lower lobe
Cholecystolithiasis
Ghon complex, right lower lung lobe

STUDENTS' DIAGNOSIS

Amyotrophic lateral sclerosis

DR. FINCHAM'S DIAGNOSIS

Amyotrophic lateral sclerosis.

The Next Twenty Years in Higher Education

(Continued from page 352)

Still another possible means of economizing would be to shorten the duration of our higher educational programs. Those in medicine are especially conscious of the preparatory time required, but many of the Ph.D. and other programs are equally long. It is possible that time could be saved, especially in the transitional years from high school to college. If all work properly belonging at the secondary level were completed before college, it would easily be possible to carry bright students to a satisfactory baccalaureate level in three years—perhaps with one summer of study.

I think that some economies are possible and that educators should strive to achieve them, yet I believe we should not make extravagant promises along these lines. The opportunities for improved efficiency or lower cost of education per student will be very limited if our object is, as I think it should be, to maintain or improve the quality of instruction.

Research. The changing conditions under which we operate tend to increase the relative importance of research in the work of the University. The nation has become keenly conscious of the role of research in the advancement of our economy and our society, and is supporting research as never before. Last year, the University received $8,600,000 from gifts and grants, mostly for research in medicine and a host of other fields. This does not count the enormous amount of research that is done by professors and graduate students as part of their regular work. In my judgment, it is essential and inevitable for the University to engage increasingly in research. Our society needs and demands expansion of knowledge in many fields—the humanities and social studies, as well as the sciences. The University of Iowa is one of a few dozen leading institutions with a high level of research capability. Research must be supported also because it contributes enormously to teaching. Learning comes alive when it is done in an atmosphere of discovery and when it is done by teachers who are themselves at the forefront of intellectual and scientific inquiry.

Let me conclude briefly by pointing out that the greatest problem of higher education in the next two decades is to avoid submergence of educational quality as we try to open up higher education to millions of additional young people. We must also learn to keep the personal touch, to maintain our concern for values as well as for facts and principles, and to cultivate the critical and appreciative qualities of mind. Higher education must continue to provide the rich personal experience and community life which most of us think of when we recall our own college days. The University, as an institution, must not become another one of the super-markets or assembly lines of our society.

Editorials

NURSING HOMES REQUIRE OUR ATTENTION

It is now asserted that life-expectancy at birth has reached 70 years, and that by 1970 an additional two years may be added to it. Even more remarkable is the prediction that nearly half of those reaching the age of 65 will live to the age of four-score. When one realizes that people over 65 years of age in this country now number some nineteen million, the magnitude of the problem of medical care for the chronically ill becomes apparent.

As a consequence of greater longevity, an increasing proportion of our population attains an age at which chronic disabling diseases are prone to occur. These disabilities often require long-term medical care, and the facilities of general hospitals are of necessity restricted to the care of the acutely ill. To meet the demand for continuous care for the chronically ill, the nursing home evolved. Originally, such institutions were converted private homes, but in recent years modern proprietary nursing or convalescent homes have been built in large numbers. At the present time, there are 474 licensed nursing homes in Iowa, providing over 14,000 beds for the care of chronically ill patients. These figures do not include facilities for custodial care, such as county homes or foster homes. Since the enactment of the nursing-home licensing act of 1957, there have been 151 nursing homes built in the state, providing 6,600 new beds.

Recent data indicate that 55 per cent of the 14,000 beds in licensed nursing homes in Iowa are occupied by welfare patients. In the recently built homes the figure is merely 35 per cent, but in the old, converted-residence homes 65 per cent of the occupants are welfare recipients. The remainder are private patients who defray their own costs of care. The Department of Social Welfare places patients in proprietary nursing homes under various programs—Old Age Assistance, Medical Aid to the Aged, Aid to the Disabled and Aid to the Blind.

The State Department of Health is responsible for licensing nursing homes and for supervising and regulating them under laws enacted in 1957 and revised in 1962.

Physician participation in the care of patients in nursing homes occurs at various levels. First, the Iowa Medical Society's Subcommittee on Public Assistance, of which Dr. L. J. O'Brien, of Fort Dodge, is chairman, has given wise counsel to and has maintained excellent rapport with the Department of Social Welfare. Second, in order to project responsibility to smaller political divisions, there is a county medical welfare committee in each county, composed of three to five physicians appointed by the county medical society and the county board of social welfare. The primary responsibility of each such committee is to maintain liaison between physicians and the county welfare department. According to the State Department of Social Welfare, these groups are functioning very effectively in the majority of counties. Third, every patient in a nursing home, according to law, is under the medical supervision of a physician of his or her own choice. Also, according to the rules and regulations established by the Iowa State Department of Health, "the physician shall visit the patient as necessary to assure adequate medical care," and "each patient shall be visited at least once every three (3) months."

In any rapidly growing program, a measure of confusion and of uncertainty is inevitable, and the nursing-home situation is no exception. This state of affairs is not peculiar to nursing homes in Iowa. Securing able administrative, nursing and housekeeping personnel has been difficult, and thus some of the institutions are inadequately staffed. Physicians have to make a special effort to care for the people who live in these homes because of the hopeless condition of so many of them. Moreover, administrators of the homes tend to provide a minimum of service to welfare recipients because the small fees paid by welfare agencies don't cover any of the luxuries of nursing care. In this situation, everyone concerned with the care of these people must be dedicated, must be prompted by compassion, and must be prepared to find his reward within his own heart.

A recent article concerning the problems of private nursing homes in New York City* points out the difficulty of providing a satisfactory level of continuing medical care to patients with severe disabilities due to chronic disease. Diabetic patients frequently develop coma, residents with cardiac ailments develop congestive failure, and digitalis intoxication is not uncommon. Close affiliation between the nursing home and a hospital is one effective approach to the solution of this problem.

The purpose of these comments is to urge the medical profession to lead in awakening each entire community to opportunities for service on behalf of elder citizens who are chronically ill. Many physicians have never observed a nursing home in operation, and the public is oblivious of the

* Haughton, J. G.: Organization of medical services in private nursing home; three new approaches. NEW ENGLAND J. MED., **272**:996-1003, (May 13) 1965.

Editorials continued...

picture within its walls. Civic clubs, church groups, the county medical auxiliary, etc. may be unable to restore youth, but they can go far toward converting a grim atmosphere into a cheerful one. They can bring hope and purpose to many unfortunate people who otherwise might lead a vegetative existence, sitting with rheumy eyes staring into space and patiently awaiting the blessing of eternal sleep. The medical profession must make sure that the aged receive the quality and quantity of medical care to which they are entitled. The old, the infirm, the sick much not be forgotten.

Charity suffereth long and is kind.

LET'S FOLLOW THE NATIONAL SAFETY COUNCIL'S EXAMPLE

"If the physician will strive to imbue each parent with a thorough awareness of the parent's primary role in the development of good character and conscience, happy, well-rounded and secure, he will have gone far in the prophylactic treatment of delinquency. This task may seem to lack drama, but its importance cannot be over-estimated in the long range approach to solving delinquent behavior."*

The national drivers' test that was presented recently by the National Safety Council over one of the television networks, under the sponsorship of a major oil company, suggests the possibility of organized medicine's getting audiences for a series of programs that would help parents do a better job of bringing up their children. It should be well worth the effort.

Such programs would reach millions of viewers who have had little guidance in rearing their youngsters. Emphasis should be placed upon "the parents' primary role in the development of good character and conscience . . ." and upon "the prophylactic treatment of delinquency."

Physicians and the public would find a conscientious endeavor to project wholesome patterns of family life and child-development mutually rewarding. Various technics could be employed—informal talks, panel discussions, dramatizations, etc. Participants could include family physicians, child psychologists and psychiatrists, social workers, clergymen, judges and teachers.

Constructive programs of real worth both to parents and to children would be greeted with enthusiasm, and for many people they would be a relief from the trivia that is regularly projected into American homes on television screens. Sponsorship for programs of such a nature, directed to the family, should not be difficult to procure.

Isn't it just as possible for Madison Avenue to sell character and old-fashioned virtue as for it to sell cigarettes and beer?

* "Delinquency," by the Committee on Juvenile Delinquency, American Academy of Pediatrics, 1960.

STAPHYLOCOCCAL SUPERINFECTION OF THE INTESTINE

A report on the successful use of the antibiotic vancomycin in the treatment of staphylococcal superinfection of the intestine will be enthusiastically received by physicians who encounter this serious complication of antibiotic therapy. Petersdorf and associates, of the University of Washington, report that seven patients with staphylococcal enterocolitis recovered promptly after the oral administration of vancomycin.*

Since the introduction of penicillinase-resistant semi-synthetic penicillins, the use of vancomycin in the treatment of staphylococcal infections has declined, and because of certain difficulties in the parenteral administration of the drug, it has lost some of its popularity. According to the Petersdorf study, however, the oral administration of vancomycin is the therapy of choice in the treatment of staphylococcal enterocolitis.

The Seattle group treated seven patients with severe staphylococcal enterocolitis. All had serious —indeed life-threatening—underlying disease. Six of them had received one or more antimicrobial agents, and one had been taking corticosteroids for the treatment of the nephrotic syndrome. In all of them, severe diarrhea was the presenting symptom.

The authors declare it imperative that staphylococcal enteritis be recognized promptly if one is to avert severe dehydration and depletion of electrolytes. As soon as the complication is recognized, the antibiotic that contributed to the enteritis should immediately be discontinued. Fluid and electrolyte balance should be restored, and an anti-staphylococcal antibiotic should be given promptly.

Vancomycin proved effective in treating all seven patients. The diarrhea stopped and staphylococci disappeared from the stool, usually within 48 to 72 hours. The 0.5 Gm. parenteral dosage (the only available form of the drug) was diluted in an ounce of saline solution or of fruit juice, and was given orally. The dose was repeated every six hours until the diarrhea ceased. When given in this manner, the drug is no more than negligibly absorbed, and virtually no toxicity has been observed.

The authors conclude that they have found vancomycin highly effective in the treatment of staphylococcal enterocolitis, and that it is simple to use, is non-toxic, is well tolerated and is economical.

* Wallace, J. F., Smith, R. H., and Petersdorf, R. G.: Oral administration of vancomycin in treatment of staphylococcal enterocolitis. NEW ENGLAND J. MED., 272:1014-1015, (May 13) 1965.

PREVENTION OF GAS GANGRENE

A salutary lesson relating to the problem of gas gangrene infection is contained in a report from the University of Missouri Hospital, in Columbia.* In a consecutive period of 30 days, four patients were admitted to the University Hospital who dramatically illustrated that the application of simple, fundamental surgical principles and adequate antibiotic therapy can avert gas gangrene infection and its tragic consequences. Gas gangrene is a preventable disease!

The Missouri surgeons define gas gangrene infection as a fulminating myonecrosis arising from a devitalized area of tissue infected with Clostridial organisms. Clostridium perfrigens (welchii) is the commonest offender. This virulent organism produces an extremely potent exotoxin that causes a severe constitutional reaction, with fever, tachycardia, weakness, pallor and profuse sweating. Local tissue destruction produces pain, and examination of the involved area reveals edema, bulla formation, crepitation and a characteristic foul odor. The course is rapidly fatal unless surgical intervention is immediate. Too much emphasis cannot be given to the basic principle that prevention, through the proper care of wounds, is vastly more important than the medical and surgical management of this serious infection.

The four cases described by the Missouri surgeons had received initial therapy elsewhere, and gas gangrene infection was present upon their admission to the University Hospital. In each instance, fundamental principles of surgical treatment of open wounds had been disregarded in the initial treatment. The first patient was a 10-year-old boy with an open fracture of the tibia and fibula that he had sustained in an auto accident. The debridement had been inadequate, a metal plate had been used to secure internal fixation in a grossly contaminated wound, and primary closure of the wound had been carried out. Because of gas gangrene, an above-the-knee amputation of the involved leg was necessary just 48 hours after the injury.

The second patient was a 22-year-old man who had suffered an open fracture of the left humerus, radius and ulna in an auto accident. Initial debridement had been delayed for 36 hours after the injury, and primary closure had been carried out despite the delay and the presence of contamination. The patient was admitted to the University Hospital 67 hours after the accident, and an above-the-elbow amputation was immediately performed because of the presence of gas gangrene.

The third patient was a 52-year-old man who had sustained third-degree burns of both legs two weeks prior to his admission to the University Hospital. Initial treatment had consisted of hospitalization, infusions of plasma, cleansing, and wrapping the extremities with firm dressings. During the two weeks before the patient's transfer to University Hospital, the dressings hadn't been changed, and on his admission the soft tissue of both legs was necrotic and crepitant, and had a foul odor. Bilateral above-the-knee amputations were performed, 20,000 units of tetanus antitoxin and 30 million units of aqueous penicillin were administered. In this patient there had been inadequate debridement, the dressings hadn't been changed over a two-week period, and the pressure dressings had been applied so tightly as to impair the circulation.

The fourth patient was a 42-year-old man with diabetes who had been admitted to his local hospital because of acidosis, and because his progress had been poor, had been transferred to the University Hospital. Upon admission, he had a severe dermatitis in both inguinal regions, and the lower abdominal wall was edematous, discolored and crepitant. He died three hours after admission. Death was attributed to lack of control of diabetes, and to gas gangrene of the lower abdominal wall. The infection, in this case, was attributed to inadequate treatment of a local infection in both groins.

Clostridial organisms, it is pointed out, are present in the soil, in water and in sewage, and can be found on human skin. The ubiquity of the organisms demands meticulous care of wounds. Certain types of wounds and certain special factors favor the development of Clostridial infections. Open fractures are especially susceptible, and the special factors just referred to are ischemia, extensive destruction and devitalization of tissues, contamination of the wound by dirt or soil, retention of clothing or foreign matter in the wound, delayed and/or inadequate debridement, and anaerobic conditions in the wound.

Care must be exercised to eliminate these factors which contribute to the development of gas gangrene. Vascular injuries should be repaired immediately, if possible, so as to assure an adequate blood supply. Constricting dressings must be avoided. Debridement of devitalized tissue must be done, even if it means a sacrifice of function. Thorough cleansing and irrigation must be carried out so as to remove all dirt and foreign material. Open fractures should be debrided, reduced and immobilized by cast or by skeletal traction. One should not use internal fixation by screws or plates in the management of open fractures. Primary closure should be carried out only if the wound is clean, if the tissue damage has been slight, and if it can be done within a few hours after the injury. If the wound is dirty and if there is much soft-tissue damage, and if more than eight hours have elapsed since the injury, the wound should be packed open, and secondary closure should be carried out a week or 10 days later. The administration of tetanus toxoid, tetanus antitoxin

* Russell, G. S., Medlin, J. J., and Almond, C. H.: Gas gangrene; preventable disease. MISSOURI MED., 62:386-388, (May) 1965.

Editorials continued...

or hyperimmune serum and of gas antitoxin must not be forgotten in the management of patients who have sustained open wounds.

Because of the frequency of serious highway accidents and of injuries sustained during the use of farm machinery, the treatment of traumatic wounds is becoming an increasingly serious problem. The application of simple, basic surgical principles and the adequate use of antibiotics will prevent the development of the serious complication of gas gangrene in such cases.

VENEREAL DISEASE REPORTS

Public health services have indicated that there has been an increase in the incidence of venereal disease in this country during the past 10 years, and that the growing frequency has occurred particularly in the younger age groups. The seriousness of the problem is dramatically brought to our attention by a recent report from the Bureau of Communicable Disease of the California State Board of Health.* It reveals the startling news that in 1964 over five times more cases of primary and secondary syphilis were reported in that state than were reported in 1955.

According to the authors, Ketterer and Condit, 379 cases of infectious syphilis were reported to the public health department in 1955, but in 1964 there were 2,148 reported cases. Indeed venereal diseases led the list of notifiable communicable diseases in California last year. There were 48,000 reported cases of venereal disease; 40,000 streptococcal infections; 34,000 cases of measles; 25,000 cases of mumps; 5,000 cases of tuberculosis; and 4,000 cases of hepatitis.

Knowledge of the venereal disease problem in California depends upon the reporting of diagnosed cases to local departments of health. Since venereal diseases are poorly reported, the problem doubtless resembles an iceberg, only a small part of which is visible above the surface of the water. The bulk of the VD problem hides unreported in each community. Previous surveys have shown that only approximately 10 per cent of all cases of syphilis and gonorrhea treated by private physicians are reported, and that fact leads Ketterer and Condit to the deduction that, rather than 48,000 cases of venereal disease in the State of California in 1964, there probably were 200,000 or more!

At the present time, about half of all infectious venereal disease cases reported are in persons under 25 years of age. Since the low point of incidence in 1955, the pronounced increase has affected all ages. In many areas of the state an increase has been particularly noted in the teen-age group, but the greatest increase has been among people 20-29 years of age.

The California public health physicians attribute the increase in venereal disease to complacency upon the part of the public and the professionals. The dramatic post-war reduction in the incidence of syphilis and the advent of penicillin brought about a feeling of overconfidence and apathy. The public is lacking in knowledge about venereal disease and its dangers, and as a consequence there has been inadequate public support for venereal-disease control programs. Changing attitudes toward sexual behavior have unquestionably contributed to the problem. In certain areas, overt homosexual behavior has constituted a serious factor in the spread of the disease. The increased mobility of the population has caused a wider and faster spread. On the other hand, of course, an increased effort by health authorities during the past few years to find infectious cases undoubtedly explains in some measure the increase in the number of reported cases.

Though there are numerous factors which have contributed to the marked increase in venereal disease, the overall cause for the resurgence, according to the California report, is that infectious cases aren't found and treated early enough. As a consequence of the delay in finding infectious cases, the source-contacts and spread-contacts aren't detected and treated promptly enough. The majority of venereal-disease patients today are treated by private physicians rather than in public health clinics. Inasmuch as only about 10 per cent of the cases diagnosed and treated by private practitioners are reported, the epidemiologic services that are available and which are essential to the control of venereal disease aren't utilized.

In the venereal disease control effort, the roles of private medicine and of health authorities are clear-cut. The physician's chief role is diagnosis and treatment. The role of the health department is epidemiologic. It investigates and interviews in order to control the spread of the disease. Private physicians represent the focal point in the control program, however, for it is they who treat most of the patients and are thus a part of the epidemiologic team. As soon as the physician has made the diagnosis of infectious syphilis, he should notify the local board of health, and if at all possible, the epidemiologic interview with the patient should be conducted in the physician's office.

It is emphasized that the physician must always be on the alert for signs and symptoms of syphilis and gonorrhea. These diseases no longer are restricted to the underprivileged. They are also found in young people who have generous allowances and drive good cars. The physician is urged to keep in mind that the majority of cases of venereal diseases are not typical. The average pa-

* Ketterer, W. A., and Condit, P. K.: Syphilis eradication; task ahead. CALIF. MED., **102**:306-309, (Apr.) 1965.

tient, except for the male with urethritis, is unaware of the signs and symptoms that characterize his or her disease. In the California experience, many patients learned of their infection only when they were referred for diagnostic study as a contact of someone who was infected.

Because medical signs are frequently hidden, the California epidemiologists assert that the following precepts must be followed if venereal diseases are to be brought under control:

1. A thorough physical examination should be carried out on every patient in whom VD is suspected. It should include examinations of all body orifices and dark-field examinations of specimens from all lesions.
2. Appropriate laboratory tests should be done routinely.
3. Epidemiologic treatment should be administered in full dosage to the sex contacts of known infectious cases.
4. Interviews with patients having diagnosed disease should be carefully, tactfully and confidentially carried out by health department interviewers, in order to get the names of contacts.

The population of the State of Iowa is approximately one-seventh that of California, and the problem of venereal disease here is small by comparison, but the same difficulties in the control of syphilis and gonorrhea prevail. Records at the Communicable Disease Division of the Iowa Department of Health show that in 1957 there were 33 cases of infectious syphilis and 596 cases of gonorrhea reported. In 1963, the numbers of reported cases had increased to 79 and 1,267, respectively, and in 1964, 61 cases of infectious syphilis and 1,805 cases of gonorrhea were reported. The State Department of Health is of the opinion that the majority of cases of syphilis are reported by private physicians. However a considerable number of cases are found by follow-up of reactive serologies reported by the State Hygienic Laboratory or by private laboratories. The Communicable Disease Division has the impression that private physicians, in general, are careless about reporting gonorrhea, but are conscientious about reporting infectious syphilis. The Health Department reports that interviews with infectious syphilis patients reveal an average of 4.6 sexual contacts.

The value of an epidemiologic approach to venereal disease control is illustrated by a 1962 study covering a three-county rural area in Iowa. A field representative of the State Department of Health, while screening reactive serologies of the State Hygienic Laboratory, found the report of a high-titre serology in a 19-year-old male. In the course of the subsequent investigation, 80 persons named as contacts were interviewed, 57 of whom were believed to have been exposed by contact with a patient during the infectious stage of the disease. Those 57 patients were referred for physical and serologic examination. Eight had primary syphilis; 8 were in the secondary stage of the disease; 2 had early latent syphilis; 24 had been exposed during an infectious stage and were treated epidemiologically; and 15 were found to be free of the disease.

In the 1962 outbreak, of the 18 cases of infectious syphilis uncovered by the epidemiologic study, only the individual whose positive serology initiated the investigation had been suspected of having the disease and was receiving treatment. One patient with a penile lesion had been given topical medication, but blood hadn't been drawn for serology. Another patient with a penile lesion who had a cold and fever had been given one injection of penicillin for treatment of the cold, but his serology hadn't been determined. Another patient with frank secondary syphilis and with a body rash hadn't been recognized as having syphilis, and a serology hadn't been done. In that particular outbreak, it was thought that the failure of physicians to detect early syphilis had been due to a low index of suspicion, and to the fact that in the rural area where the outbreak occurred, physicians had seen few cases of early syphilis.

It is clear that if the increasing incidence of venereal disease is to be stopped, there must be special effort and close teamwork among practicing physicians, public health personnel and laboratories. The physician must be alert, and he must maintain a high degree of suspicion if he is to recognize venereal-disease patients promptly and treat them properly. Prompt reporting of each case of venereal disease to the Venereal Disease Section of the Communicable Disease Division, State Health Department, will permit rapid investigation of contacts. This action will assure that the contacts of infectious patients are examined, tested and treated. Every physician is asked to cooperate in an effort to reverse the alarming increase in venereal disease. The State Health Department requests that all new cases of primary or secondary syphilis be reported promptly by telephone, collect. The phone number is Des Moines (515) 281-5427.

It's your professional privilege to replenish your ranks...

Give to medical education through AMA-ERF

AMA-ERF

American Medical Association
Education and Research Foundation
535 N. Dearborn St., Chicago 10, Illinois

CPC Films for County Medical Societies

Wm. S. Merrell Company showed the third of its series of CPC films, "CPC at Washington University School of Medicine, St. Louis," at the annual meeting of the AMA in New York City last month. Like "CPC at Philadelphia General Hospital" and "CPC at Cook County Hospital," which were released earlier, the new motion picture is available in 16mm. color and sound for showings at medical society or hospital staff meetings, free of charge, from the Merrell Film Service, Cincinnati 45215.

The format used permits audience participation. The medical faculty presents an interesting case —one with a special diagnostic problem. As the film progresses, the medical history unfolds. Then the projector is stopped for a time so that the physicians in the audience can review what has been presented and can offer their diagnoses. The second part of the film reveals the final diagnosis as seen by the pathologist. With each film, copies of the protocol of the case are supplied so that physicians can study the material before and after seeing the motion picture.

Merrell plans to produce more CPC films for the medical profession.

Short Courses at Iowa City

The first two of the 1965-1966 series of U. of I. postgraduate short courses have been designed to overlap. The program on pediatrics, scheduled for Wednesday and Thursday, September 15 and 16, includes a day devoted to problems that are more or less peculiarly those of children, and the first day of the Annual West North-Central Interprofessional Seminar on Diseases Common to Animals and Man, which is to take up Thursday and Friday, September 16 and 17. The third and fourth are in Urology (Sept. 24-25), and Radiology (October 2-3).

Wednesday, September 15

PEDIATRICS

9:15 a.m. "Etiology of Respiratory Infections in Infants and Children"—H. G. Cramblett, M.D., professor of pediatrics at Ohio State University

10:00 a.m. "Intrauterine Transfusions"—C. P. Goplerud, M.D., and J. C. Taylor, M.D.

10:45 a.m. "Recent Advances in Antimicrobial Therapy"—Chien Liu, M.D., head of the Section on Infectious Diseases, University of Kansas Medical Center

11:30 a.m. "Strabismus"—C. E. Windsor, M.D., clinical instructor, Washington University College of Medicine, St. Louis

12:15 p.m. QUESTIONS AND ANSWERS

12:30 p.m. LUNCH

1:30 p.m. "Cystic Fibrosis"—R. D. Gauchat, M.D.

2:15 p.m. "Peritoneal Dialysis"—G. M. Owen, M.D., and C. E. Nelson, M.D.

3:15 p.m. CASE PRESENTATIONS

4:15 p.m. BUSINESS MEETING—Iowa Chapter, American Academy of Pediatrics

6:30 p.m. SOCIAL HOUR AND DINNER—University Athletic Club

Thursday, September 16

DISEASES COMMON TO ANIMALS AND MAN

8:50 a.m. "Clinical Manifestations of Milkers' Nodule" —C. E. Radcliffe, M.D.

9:15 a.m. "The Use of Fluorescent Antibody Technic in Infectious Disease"—Dr. Liu

9:45 a.m. CASE PRESENTATION FROM THE PEDIATRIC DEPARTMENT—Dr. Nelson

10:00 a.m. "Isolation of Pathogenic Leptospires from Waters Used for Recreation"—S. L. Diesch, D.V.M., and W. F. McCulloch, D.V.M.

10:35 a.m. "Atypical Mycobacteria"—Dr. Cramblett

11:05 a.m. "Epidemiology of Histoplasmosis—Mason City Studies"—S. L. Hendricks, D.V.M., and R. H. Heeren, M.D., Iowa State Department of Health

11:30 a.m. "Orf"—J. G. Thomsen, M.D.

12:00 noon QUESTION AND ANSWER PERIOD

12:30 p.m. LUNCH

1:30 p.m. "Observations of Leukemia and Lymphoma in a Predominantly Rural Area of Nebraska"—R. C. Rosenlof, M.D., Kearney, Nebraska

1:45 p.m. "Illness in Children Associated with California Encephalitis Virus Infections in Wisconsin"—W. H. Thompson, D.V.M., Department of Preventive Medicine, University of Wisconsin

2:00 p.m. "Turtles as a Source of Salmonellosis in Children"—L. P. Williams, Jr., D.V.M., veterinary epidemiologist, Minnesota State Department of Health

2:15 p.m. "Leptospira Grippotyphosa in a Dairy Herd"—R. J. Martin, D.V.M., L. E. Hanson, D.V.M., and P. R. Schnurrenberger, D.V.M., Illinois Department of Health

2:30 p.m. "Immunologic Competence of Neonatal Animals"—M. L. Kaeberle, D.V.M., Iowa State University

3:15 p.m. "Incidence of Bordetella Bronchoseptica in the Respiratory Tracts of Swine, Wildlife and Swine Caretakers"—W. P. Switzer, D.V.M., Iowa State University

3:30 p.m. "Rift Valley Fever: Potential for Spread Into the United States"—L. C. Murphy, D.V.M., University of Missouri

3:45 p.m. "Pathogenic Fungi Isolated From Natural Sites in Iowa"—J. Cazin, Jr., Ph.D., K. L. Anderson, M.S., and R. Taube, B.A.

6:00 p.m. SOCIAL HOUR AND DINNER—University Athletic Club
SPEAKER: Raymond G. Bunge, M.D.

Friday, September 17

9:15 a.m. "Certain Aspects of Antibody Production in Cattle Against Mycobacterial Antigens"—E. M. Ellis, D.V.M., National Animal Disease Laboratory, Ames

9:30 a.m. "Epidemiology of Listerosis in Missouri"—D. E. Blender, D.V.M., University of Missouri
9:45 a.m. "Chronic Localized Brucellosis of the Spleen"—G. F. MacDonald, M.D., W. J. Martin, M.D., W. E. Wellman, M.D., and L. A. Weed, M.D., Mayo Clinic
10:00 a.m. "Identification of Brucella Abortis Cultures From Vaccinated Cattle"—L. M. Jones, Ph.D., University of Wisconsin
10:45 a.m. "Nutritional and Biochemical Characteristics of a Leptospire From Frog Kidney Tissue"—H. C. Ellinghausen, Jr., Ph.D., National Animal Disease Laboratory, Ames
11:00 a.m. "Porphyria in Cattle"—W. M. Wass, D.V.M., Iowa State University
11:15 a.m. "Phagocytosis of Phase I and Phase II Rickettsiae by Mouse Macrophages"—C. M. Downs, Ph.D., R. Cady, M.A., and T. Hodges, B.A., University of Kansas
11:30 a.m. DISCUSSION PERIOD
12:30 p.m. LUNCH
1:30 p.m. "Characteristics of Staphylococcus Aureus Isolated from Wild Animals"—M. G. Plommet, D.V.M., and J. B. Wilson, Ph.D., University of Wisconsin
1:45 p.m. "One Way of Dying—Staphylococcal Sepsis"—I. M. Smith, M.D., Shirley Lindell, M.S., and S. Rabinovich, M.D.
2:00 p.m. "1964 Outbreak of Western Encephalitis in Illinois"—Dr. Schnurrenberger
2:45 p.m. "Diseases of Monkeys Transmissible to Man"—N. F. Cheville, D.V.M., and J. Kluge, D.V.M., National Animal Disease Laboratory, Ames
3:00 p.m. ORGANIZATIONAL MEETING—West North Central Interprofessional Group

---

PROBLEMS IN UROLOGY

Friday, September 24

8:45 a.m. CLOSED-CIRCUIT TELEVISION OF UROSURGICAL PROCEDURES—Urology staff
11:00 a.m. "Basic Considerations in the Dissemination of Cancer"—Warren H. Cole, M.D., head of surgery, University of Illinois College of Medicine
12:00 noon DISCUSSION
12:30 p.m. LUNCH
1:45 p.m. "Arteriography in the Diagnosis of Bladder Cancer"—Myron H. Nourse, M.D., associate professor of surgery, University of Indiana
2:15 p.m. DISCUSSION
2:30 p.m. "Wilms's Tumor—Chemotherapy"—James C. Taylor, M.D.
2:45 p.m. DISCUSSION—Opened by H. B. Latourette, M.D., and Rubin H. Flocks, M.D.
3:00 p.m. "Ureteral Injuries"—Mark A. Immergut, M.D.
3:15 p.m. DISCUSSION
3:45 p.m. "Renal Trauma"—David A. Culp, M.D.
4:00 p.m. DISCUSSION
4:15 p.m. PYELOGRAM CONFERENCE (Bring your problem cases)—Dr. Flocks, moderator
5:15 p.m. EXECUTIVE SESSION—Iowa Urological Society

Saturday, September 25

9:00 a.m. INFERTILITY AND INTERSEX PROBLEMS (Bring your problem cases)—Dr. Bunge, moderator

---

RADIOLOGY

Saturday, October 2

Room E-328, University Hospitals

3:00 p.m. BUSINESS MEETING—Iowa Radiological Society
5:00 p.m. SOCIAL HOUR AND DINNER

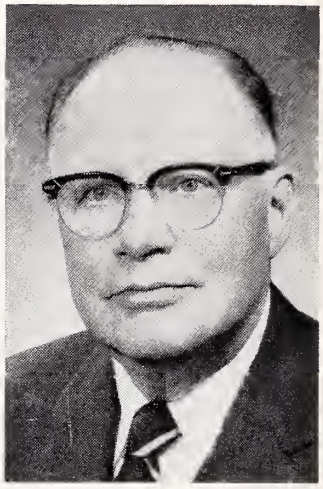
Sunday, October 3

E-331, Medical Amphitheater, University Hospitals

10:00 a.m. "Some Knee and Elbow-Joint Problems in Children"—E. F. VanEpps, M.D.
"Radiation Treatment of Carcinoma of the Prostate"—J. C. Spellmeyer, M.D.
"The Pyelogram Urea Washout Test in Renovascular Hypertension"—S. H. Cornell, M.D.
11:00 a.m. "Experimental Studies Toward Improving Intravenous Urography"—H. W. Fischer, M.D.
"Polyview Voiding Cystourethrography"—J. R. Thornbury, M.D.
"Development of Iowa Tumor Registry"—H. B. Latourette, M.D.
"Congenital Multiple Polyposis"—D. E. Fuller, M.D.
12:00 noon LUNCH
1:00 p.m. "Infusion Pyelotomography"—K. D. Dolan, M.D.
"Posterior Fossa Tumors"—H. W. Pribram, M.D.
"Recent Advances in the Treatment of Hodgkin's Disease"—G. R. Locke, M.D.
"Multiple Neurofibromata of the Spinal Cord in a Patient With Two Intracranial Meningiomas"—J. E. Lichty, M.D.
2:00 p.m. "Comparison of Tannic Acid vs. Alum in Barium Enemas"—G. M. Wyatt, M.D., chief of radiology, Mercy Hospital, Iowa City
"Spontaneous Cerebrospinal Fluid Leak and Fistula"—A. C. Hass, M.D.
"Treatment of Carcinoma of the Cervix"—Dr. Hass
"Pycnodysostosis and Two Unusual Colon Obstructions"—F. M. Trunkey, M.D.
"Venography in Carcinoma of the Breast"—B. Peterson, M.D.
"Subtraction—Technics and Examples"—F. E. Patterson, M.D.

The IMS Roster, formerly printed in the July JOURNAL each year, is to be printed and mailed to members separately this month. It will include mailing addresses for all physicians, a separate listing of physicians by counties, and a roster of the Woman's Auxiliary.

President's Page



It has been my pleasure, during the past month, to have the privilege of attending the state medical society meetings of three adjoining states. At each meeting, I attended house of delegates sessions, banquets and board meetings.

Besides having very enjoyable experiences, meeting old friends and making new acquaintances, I left with certain impressions.

The societies I visited all have problems similar to ours, and some of their problems are greater. All members are working toward the same goal: the preservation of free enterprise for the betterment of patient care.

However, I was left with a feeling of great pride in my own Society. Our unity is outstanding. The attendance at none of the other societies' meetings is as great as ours, in proportion to the total number of members. The exhibits are more numerous than ours, and the scientific programs are better, but our socio-economic presentations are superior.

Financially we are doing well, and I found it satisfying to realize that we own our present building and will soon be in a new, modern structure.

All the banquets that I attended were excellent. We have something to learn from them, and an attempt will be made this year to effect a change.

Last but not the least is my realization of the excellence of our executive staff members, and the high esteem in which they are held by the staffs of other societies. All of the state societies that I visited are staffed by excellent personnel, but I realize now how overworked our staff actually is. In proportion to the numbers of members, we are very low on the totem pole as regards the size of our staff. Likewise, many public relations projects are conducted by outside firms in the other states, whereas in Iowa our own staff does them all.

These meetings are some of the rewards of being president, and I shall always remember the courteous treatment that both Mrs. Ober and I received. Also, after seeing other state groups in action, I am reassured that organized medicine is far from defeat.

Frank Ober

President

Coming Meetings

CONTINENTAL U. S.

July 5-8	**Ophthalmology,** University of Colorado School of Medicine, Estes Park, Colorado.
July 16-17	**19th Annual Rocky Mountain Cancer Conference,** Brown Palace Hotel, Mile High City, Denver.
July 18-24	**11th Annual General Practice Review,** University of Colorado School of Medicine, Denver.
July 19-Aug. 20	**Second Course in Hospital Engineering Problems,** University of Minnesota, Minneapolis.
July 26-30	**Interpretation and Therapy of Cardiac Arrhythmias,** Hahnemann Medical College and Hospital, Cardiovascular Institute, Philadelphia.
Aug. 2-6	**Pediatrics,** Uiversity of Colorado School of of Medicine, Estes Park, Colo.
Aug. 9-13	**Internal Medicine,** University of Colorado School of Medicine, Estes Park, Colo.
Aug. 16-20	**Medical Audiology Workshop,** University of Colorado School of Medicine, Estes Park, Colo.
Aug. 19-20	**Fourth Annual Postgraduate Conference on the Medical Aspects of Sports,** University of Rhode Island, Keaney Gymnasium, Kingston, Rhode Island.
Aug. 22-27	**Eleventh Annual Flying Physicians Association Meeting,** Deauville Hotel, Miami Beach.
Aug. 22-27	**American Academy of Physical Medicine and Rehabilitation,** Sheraton Hotel, Philadelphia.
Aug. 26-28	**Current Concepts in Surgery,** University of Wisconsin Medical Center, Madison, Wisc.

ABROAD

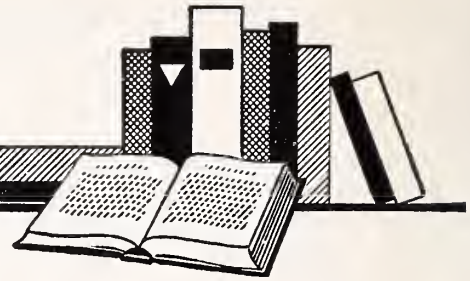
July 4-10	**Second European International Seminar, "New Horizons in Rehabilitation,"** Oxford University, Oxford, England.
July 6-9	**International Microscopy Symposium,** University of Sheffield, Sheffield, England.
July 7-10	**National Congress of Angiology** (Brazilian College of Angiology), Rio de Janeiro, Brazil.
July 12-15	**Congress of Constitutional and Diathetic Medicine,** Kyoto, Japan.
July 12-16	**Fourth International Congress of Dietetics,** Stockholm.
July 12-17	**12th International Conference on Spectroscopy,** Exeter, England.
July 15-18	**Symposium on Biophysics and Physiology of Biological Transport,** Villa Falconieri, Frascati, Italy.
July 22-24	**International College of Surgeons Guanabara Division Meeting,** Rio de Janeiro, Brazil.
July 25-30	**International Symposium on Variation in the Chemical Composition of the Nervous System Determined by Genetic and Developmental Factors,** Oxford, England.
July 25-30	**International Psychoanalytical Congress,** Amsterdam.
July 28-31	**Second International Congress of Psychosomatic Medicine in Obstetrics and Gynecology,** Vienna, Austria.
Aug. 3-7	**Fifth Acta Endocrinologica Congress,** Hamburg, Germany.
Aug. 4-15	**American Physicians Fellowship Orthopedic Seminar,** Israel Medical Association, Israel.
Aug. 8-14	**Eighth International Anatomical Congress,** Wiesbaden, Germany.
Aug. 14-20	**Second Australian Medical Congress,** Perth, Western Australia.
Aug. 15-21	**Pan American Congress of Ophthalmology,** Rio de Janeiro.
Aug. 16-21	**European Congress on Molecular Spectroscopy,** Copenhagen.
Aug. 17-20	**Anesthesiological Symposium** (Anesthesiological Section of the Czechoslovak Medical Society), Praha, Czechoslovakia.
Aug. 20-25	**Ninth International Congress on Diseases of the Chest,** Council on International Affairs of the American College of Chest Physicians, Copenhagen, Denmark.
Aug. 22-27	**International Conference on Medical Electronics and Biological Engineering,** Tokyo Prince Hotel, Tokyo.
Aug. 23-28	**Congress on Neurological Surgery,** Copenhagen.
Aug. 23-29	**International Association of Logopedics and Phoniatrics,** Vienna.
Aug. 24-27	**25th International Congress of Pharmaceutical Sciences,** Praha, Czechoslovakia.
Aug. 25-Sept. 1	**Third International Symposium on Fluorine Chemistry,** Munich.
Aug. 26-Sept. 2	**Second International Conference on Protozoology,** London.
Aug. 28-Sept. 4	**Second International Symposium on Stereoencephalotomy,** Copenhagen (Aug. 28), Vienna (Sept. 4).
Aug. 30-Sept. 3	**Fifth International Congress of Neuropathology,** Zurich, Switzerland.
Aug. 30-Sept. 3	**Advanced Course in Electroencephalography,** Salzburg Congress House, Vienna.
Sept. 5-8	**Federation of Societies for French-Speaking Gynaecologists and Obstetricians Congress,** Lausanne, Switzerland.
Sept. 5-9	**European Academy of Allergology,** Stockholm.
Sept. 5-10	**International League Against Epilepsy—Quadriennial Meeting,** Vienna, Australia.
Sept. 5-10	**Sixth International Congress of Electroencephalography and Clinical Neurophysiology,** Vienna, Austria.
Sept. 5-10	**Eighth International Congress of Neurology,** Vienna, Austria.
Sept. 6-10	**Seventh International Embrylogical Conference,** London.
Sept. 9-11	**Second International Congress on Phlebology,** Wiesbaden.
Sept. 11-12	**Symposium on Brain Edema,** Vienna.
Sept. 15-18	**International Association of Gerontology** (4th Congress of European Clinical Section), San Remo, Italy.
Sept. 16-19	**Seventh International Congress of General Practice,** Salzburg, Austria.
Sept. 19-24	**World Medical Association 19th Annual Assembly,** London.
Sept. 22-28	**Eleventh International Congress of Radiology,** Rome, Italy.
Sept. 28-30	**College of General Practice of Canada,** Prudhomme's Hotel, Vineland, Ontario.
Oct. 5-9	**18th International Tuberculosis Conference,** Munich.
Oct. 5-9	**Fourth International Congress of Infectious Pathology and Parasitology,** Freiburg, Germany.

Dr. Jeannette Throckmorton's Quilts

In the Textile Galleries at the Art Institute of Chicago, Michigan Avenue at Adams Street, five quilts designed by the late Jeannette Dean Throckmorton, M.D., of Des Moines, are on display for the summer.

Dr. Throckmorton, who headed the staff at the Iowa State Medical Library for a great many years, made a hobby of needlework and received numerous honors for her creations.

THE JOURNAL *Book Shelf*



BOOK REVIEWS

TRAUMA TO THE LIVER, by *Gordon F. Madding,* M.D. and *Paul A. Kennedy,* M.D. (Philadelphia, W. B. Saunders Co., 1965, $6.00).

This monograph on liver injuries is a thorough discourse on a rather narrow subject. The authors, who had extensive experience with liver injuries during World War II, are authorities on the subject.

The book is very specific and concise in many areas. The chapter on diagnosis and management of liver injuries, for instance, is very practical, and contains brief and clear-cut discussions of symptoms, signs, problems of multiple injuries, etc.

The progressive increase in high-speed auto accidents is well known. Because of this, any doctor who practices near a busy highway or intersection (and who doesn't?) would find this monograph of value both for review and for reference.—*Daniel F. Crowley,* M.D.

ANIMAL BEHAVIOUR AND DRUG ACTION—A CIBA FOUNDATION SYMPOSIUM, ed. by *A. V. S. deReuck,* M.Sc., D.I.C., A.R.C.S., and *Julie Knight,* B.A. (Boston, Little, Brown and Company, 1964, $13.00).

If there is a relationship between biochemical events and animal behaviour, then drugs can be used to alter these relationships. This is the thesis of ANIMAL BEHAVIOUR AND DRUG ACTION—a recent Ciba Foundation symposium.

The volume reports 10 sessions during which papers were presented by 47 authors of international reputation. Session one concerned the behavioral analysis of drug action, with sections on motivation, conditioning and memory. The second session studied neurophysiologic and biochemical correlates, with special reference to EEG measurements. The third session dealt with the factors which modify drug effects on behavior. Session four related the behavioral effects of drugs in animals to the effects in man.

A mere doctor of medicine, having reached this point in the proceedings, is gratified to note that one of the essayists voiced doubts as to transposing information derived from animal studies directly to man.

Sessions five, six, seven and eight epitomized the biochemical approach, the electrophysiologic approach, the neurophysiologic approach, and the pharmacologic approach, respectively. Session nine presented in more detail the extrapolation of findings from animals to man, and the tenth and concluding session discussed clinical implications.

This volume of psychopharmacology is detailed and exhaustive. Its appeal is no doubt limited, but of considerable importance, nevertheless, to an understanding of future developments in psychopharmacology. The Ciba Foundation is to be commended for making such international conferences possible, and for publishing the proceedings.—*John T. Bakody,* M.D.

THE VISUAL FIELDS—A TEXTBOOK AND ATLAS OF CLINICAL PERIMETRY, SECOND EDITION, by *David O. Harrington,* M.D. (St. Louis, C. V. Mosby Company, 1964, $16.00).

As stated in the preface to the first edition, this book is a clinical guide to the examination and interpretation of the visual fields. The material is a compilation of the author's own clinical experience, and as such, it emphasizes the clinical viewpoint. The chapters on the anatomy of the visual pathway and its vascular supply are much the same as those found in other standard texts dealing with this subject matter.

The ophthalmologist, the neurologist and the neurosurgeon will find this atlas interesting and helpful in understanding visual field defects stemming from lesions involving the visual system from the globe to the visual cortex. The material is nicely organized for quick reference, concisely discussed and beautifully illustrated with 318 figures and nine color plates.

This textbook and atlas is a worthwhile addition to the library of the practitioner confronted with neuro-ophthalmological problems, all of which call for visual-field studies and their interpretation.—*Robert H. Foss,* M.D.

BOOKS RECEIVED

TRACY'S THE DOCTOR AS A WITNESS, by *William J. Curran,* LL.M., S.M. Hyg. (Philadelphia, W. B. Saunders Co., 1965, $5.75).

RHEUMATIC FEVER, DIAGNOSIS, MANAGEMENT AND PREVENTION, by *Milton Markowitz,* A.B., M.D. and *Ann Gayler Kuttner,* B.S., Ph.D., M.D. (Philadelphia, W. B. Saunders Co., 1965, $7.50).

PROBLEM CASES FROM FRACTURE GRAND ROUNDS AT THE MASSACHUSETTS GENERAL HOSPITAL, by *W. H. Harris,* M.D., *W. N. Jones,* M.D. and *O. E. Aufranc,* M.D. (St. Louis, C. V. Mosby Co., 1965, $20).

MARK YOUR CALENDAR NOW!

Iowa Chapter of the AAGP
Seventeenth Annual
SCIENTIFIC ASSEMBLY AND MEETING
Hotel Savery—Des Moines
September 27-28, 1965

Iowa Chapter of the American Academy of General Practice

Suggestions for Athletic Conditioning

R. W. Hammer, M.D.

The Iowa Chapter of the American Academy of General Practice has served as a focal point for an exchange of ideas by interested groups concerning athletic conditioning and the care of athletes' injuries. The quality of material presented has been good, and some of it is presented here so that others who are regularly or occasionally responsible for the medical aspects of sports can be aware of our endeavors.

An adequate history of the previous illnesses and injuries of each youngster should be made available to the physician who is to give the preseason physical examinations. When possible, the exam should be done by the family doctor, in as much privacy as conditions permit, and as thoroughly as any other routine physical. For completeness, it should include a urinalysis and a check of the hemoglobin, as well as checks of the blood pressure and the response of the pulse to exercise. The physician must satisfy himself that his evaluation has been adequate and that it justifies the athlete's participation in the sport involved.

Each school will make its own arrangements for medical coverage at athletic contests. Whenever possible, a team physician should travel with the team. Such an arrangement becomes difficult for towns having only a limited number of physicians or none at all, and during basketball season it is especially difficult because of the frequency of the games. The home team should have a physician available—preferably on the bench—for first aid to both teams, in case the visitors haven't brought one.

There should be good rapport between the team physician and each player's family doctor, so that continuity of care will be assured in case of injury and so that permission for the boy's return to the sport can be firmly based. During a game, whenever a medical question is involved, the team doctor should have the final word as to whether an athlete returns to action. And when athletes are recuperating from injuries, the coach, the family doctor, the trainer and the team physician should coordinate their efforts so that they can return to action rapidly and be prepared for full-time performance.

Examination of the injured athlete should be done on the field. If there is any doubt about the seriousness of an injury, a stretcher should be used to get the player to an area where a more leisurely exam can be made. Enough equipment should be removed so that the injured part can be visualized. An injury should not be injected so that the athlete can return to play. If an injection is deemed necessary for the relief of pain, it should be given, but the player should be kept out of the game. The team doctor should follow the players to the dressing room, so that he can recheck all previously recognized injuries and can spot any new ones.

A concussion sustained during a game constitutes sufficient reason for not allowing an athlete to return to play during that contest, and for keeping him out of scrimmages and games until all residuals are gone. Some authorities urge that high school athletes who have had two bona fide concussions should not be allowed to participate further during the current season. Another specific injury discussed was damage to the ligaments of the knee. Complete or nearly-complete tears of these ligaments should be surgically repaired soon after the diagnosis has been made.

Athletic conditioning is a long-term process, and cannot be accomplished during the interval between the first practice and the first game. Individuals must be motivated to accomplish it on their own, but with proper guidance from coaches and trainers. Particular attention should be given to the developing of endurance and speed along with agility and strength for the sport involved. There is considerable feeling that this is accomplished for all sports except football, where severe limitations have been placed on the duration of contact between the coach and his players. It has been recommended that the conditioning period be lengthened. For financial reasons, this would probably be accomplished by shortening the period during which contact drills are permitted before the first game. It is felt that this change would reduce the number of football injuries, for they usually occur during the first few days of practice scrimmages and in the first game, and generally in athletes who aren't in good condition. One of the most difficult areas to get into good shape is the neck. For this reason, additional attention should be given to the neck, and the high school athlete should be instructed to shoulder-block. Spear-blocking should not be taught.

As far as football equipment is concerned, there has been considerable discussion about eliminating the face-guard and relying on the mouth-guard. New studies are being done on helmet styles so that a more definite recommendation can be made before next year. Several teams will be experimenting with the soccer type shoe this coming fall. The soccer shoe, and the high-top shoes, should prevent some of the serious injuries to the knees of backs and ends. All equipment should be properly fitted, and all protective devices worn.

Diet is a topic that deserves the concern of most teenagers, their parents and their coaches. The Iowa High School Athletic Association has a brochure "Food for You—the High School Athlete" which is succinct and understandable. The association will make copies of it available to your team. It is hoped that physicians will use their influence to prevent salesmen from starting food or vitamin fads among team members. Special vitamins, hormones, dextrose tablets, etc. very seldom have any but psychological value. Diets should be adequate to maintain the player's weight throughout the season. After the cessation of training, diet should be restricted accordingly.

Much concern has been expressed over the rapid loss of weight by boys who take part in wrestling. It is felt to be detrimental to the long-term development of the individual, and generally it doesn't present the wrestler at his optimum strength for competition. New rules adopted by the Iowa High School Athletic Association may help to solve this problem, but further education of coaches and parents will be needed.

Water should be available to athletes, especially in hot weather. It may be dispensed in measured amounts, such as two ounces. That quantity can be tolerated, and it should be allowed as often as once each hour during practices and games. Adequate salt replacement can be provided in the diet, in tablets, and to a limited extent in the water at the bench.

Physical therapists are valuable partners for the doctor and the coach. They are competent in the anatomy and physiology involved in injury and repair. They can supervise pre-season and post-injury conditioning programs, in conjunction with the coach. Athletes can be taught the proper application of wraps, tape, etc. Taping provides comfort and stability by splinting and supporting torn ligaments, muscles and tendons. Proper usage of it will also accelerate healing, besides giving moderate fixation so that joints won't exceed normal physiologic limits. In addition, pain will be relieved to some extent. Tape should be applied to shaven, clean, dry skin, but something like benzoin can be applied first, where needed. Undue tension and pain should be avoided. For injuries, one should overcorrect the injury while strapping. Each sport has its individual types of injuries, and taping should be done with reference to a particular sport. In general, continuous circular taping is to be avoided. Tape should not be left in place for more than five days, and circular strappings used for support should be removed immediately after the game or practice period.

Athletes who wear glasses should be encouraged to get hardened (safety) glasses or contacts as a means of preventing eye injuries.

Summer practice for football should begin with getting the athletes used to the heat and humidity. They can help themselves by spending longer and longer periods outside of air-conditioning, and by working in the sun. Thus they will increase their heat-exercise tolerance, will avoid severe sunburns, and will save valuable time for further conditioning during their first four days of practice.

The Iowa Chapter is pleased to serve as a focus for discussion of athletic conditioning and injuries. The above notes are summaries from long and involved discussions. Further information will be passed along as things develop. It is hoped that a booklet covering basic essentials and providing a bibliography of source materials can be made available.

We are deeply indebted to the following organizations for their cooperation: Iowa Medical Society, Iowa Orthopedic Society, Iowa Academy of Pediatrics, Iowa High School Athletic Association, Iowa Congress of Parents and Teachers, University of Iowa College of Medicine, Iowa Chapter of the American Physical Therapy Association. We are also grateful for the encouragement given us by the AMA Committee on the Medical Aspects of Sports.

It is hoped that there can be a doctor-coach clinic in Des Moines in early September. Notices will be mailed as soon as a date has been set.

Resource materials currently available are numerous, and the following are no more than a few of them: (1) "Food for You—the High School Athlete" (IHSAA, Boone, Iowa); (2) "Tips on Athletic Training" I through IV (AMA, 535 North Dearborn Street, Chicago 60610—5c per copy); (3) "Johnny Makes the Team" (AMA); (4) "Safeguarding the Health of the High School Athlete" (AMA, a check-list to help the school evaluate five major factors in the health of the high school athlete); (5) "First Aid Chart for Athletic Injuries" (AMA, adapted from a California Medical Association chart); and (6) Texts by O'Donoghue and by Al Ferguson, Jr. Further information can be obtained from local libraries and from the State Medical Library, Historical Building, Des Monies 50319.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the JOURNAL, 529-36th Street, Des Moines, Iowa 50312.

Iowa Association of Medical Assistants

1965-1966 Officers

Interesting, informative and inspirational speakers added much to the success of our eighth annual meeting, held in Mason City May 13-16, 1965.

The Third Leadership Seminar was well attended and enthusiastically received, the educational and social aspects of the convention were well planned and successfully executed, and the meeting of the House of Delegates was fruitful. We look forward to our next meeting in May, 1966, in Des Moines.

Following the Sunday brunch and before adjournment, the following officers were installed:

Mrs. Dolores Mallinger, president, from Fort Dodge, is a graduate of Fort Dodge High School and Tobin Business College. She has been employed by Dr. Eric M. Swanson for the past seven years as secretary-assistant. Previously she had been employed in the same capacity in the office of the late Dr. A. S. McMillen for four years, and in the office of the late Dr. L. L. Leighton for 5½ years. She is a charter member of the Fort Dodge Medical Assistants, and has served as its secretary, president-elect, president and parliamentarian. She has served IAMA as editor of its annual bulletin, and also as recording secretary, as president-elect and as a delegate from IAMA to the AAMA annual meetings.

Mrs. Mallinger

The president-elect, Mrs. Gladys Barber, Cedar Rapids, is secretary, receptionist and bookkeeper for Dr. Keith W. Woodhouse, a position she has held for nine years. Previous to that she was credit manager in a local department store for six years. She has served the Linn County Medical Assistants as treasurer, chairman of its Civic, Publicity and Finance Committees, and was treasurer of the 1964 IAMA convention held in Cedar Rapids.

The vice-president, Mrs. Dorla Sansom, is employed by Drs. Parker Hughes and Richard Moore, in Des Moines, as receptionist, medical secretary and assistant. She is a charter member of the Des Moines Chapter of Medical Assistants, has served her chapter as chairman of various committees and as president, and has also served IAMA as recording secretary.

Mrs. Jeanne D. Green, the recording secretary, was graduated from St. Joseph's High School, DeWitt, and served as receptionist/secretary for Dr. Dean Snyder, of DeWitt, for three years. For the past 16 years she has been medical assistant and secretary to Dr. James F. Bishop, in Davenport. She is a charter member and was the first president of the Scott County Medical Assistants. She has served IAMA as a member of its Bulletin, Newsletter, and Membership Committees, and is serving her second year as recording secretary. She is currently group leader of her local chapter's Blue Cross/Blue Shield group, and keeps a medical-assistant employment registry for Scott County physicians, in cooperation with the Iowa State Employment Service.

The treasurer, Mrs. Nita Moon, Waterloo, has been employed for the past five years as secretary, bookkeeper, and receptionist for Dr. Craig Ellyson. She was treasurer of the Blackhawk Medical Assistants for two years, and served as its parliamentarian and chairman of its Membership Committee. She is serving her second year as IAMA treasurer.

Mrs. Carol Becker, of Fort Dodge, was appointed corresponding secretary. She is currently pres-

ident of her local chapter, is a past vice-president, secretary and treasurer, and also has been a member of its Membership and Program Committees. In 1964-5 she served IAMA as chairman of the Bulletin Contest Committee. She is a member of the Advisory Board for Medical Assistants Training Program at the Fort Dodge Community College. For the past five years she has been employed as x-ray technician and assistant to Drs. Otto N. Glesne and J. F. Kelly.

Mrs. Grace Brock, of Panora, was reappointed to the post of historian, a position she has held for nine years. She is a graduate of the Guthrie County High School and attended Drake University. She taught in rural schools as well as in Marshalltown and Panora Public Schools. For the past 11 years she has been employed as receptionist and bookkeeper by Drs. Nicoll and Peterson, of Panora, and for seven years prior to that, she worked in the same capacity for Dr. Nicoll. She is currently president of the Des Moines Chapter of Medical Assistants and served as its vice-president for two terms.

The parliamentarian, Miss Margaret Hansen, is a graduate of the Immaculate Conception Academy, in Davenport, and attended the Women's Division of St. Ambrose College. Since 1954 she has been employed as secretary/assistant to Dr. W. Hollander in Davenport. Earlier she was receptionist, secretary and bookkeeper at Mercy Hospital, a member of the office staff of a Davenport insurance company, and of the office staff of the Davenport Psychiatric Hospital. She has served the Scott County Medical Assistants as president and secretary, and as chairman of its Finance Committee. She is a past president of IAMA and has served as chairman of its Bulletin, Newsletter, and Nominating Committees, and as Delegate to the AAMA annual meeting.

A post-convention meeting of officers and committee chairmen was held, and over-all plans for the coming year were discussed.

—*Helen G. Hughes*

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.

Flying Physicians' Meeting

The eleventh annual meeting of the Flying Physicians Association will be held at the Deauville Hotel, in Miami Beach, from August 22 through 27, according to Kenneth K. Hazlet, M.D., of 1303 Atlantic Street, Dubuque, chairman of the Association's Iowa Chapter.

Among the men who are scheduled to participate in the program and the subjects they will discuss are Roger F. Reinhardt, Capt., USN, MC, head of the Division of Psychiatry and Neurology, at the U. S. Naval School of Aviation Medicine, Pensacola, "Emotional Factors in the Causation of Common Aircraft Accidents"; Major General M. Samuel White, M.D., federal air surgeon, "Our Responsibilities in Air Safety"; and P. V. Siegel, M.D., chief of the Aeromedical Certification Division of the Federal Aviation Agency's Aeromedical Center, Oklahoma City, "Exercising Clinical Judgment in Certification."

The FAA's Civil Aeromedical Research Institute, at Oklahoma City, will be represented by four speakers. Stanley R. Mohler, M.D., the institute's director, will discuss "The Cause of Crashes and Recommended Therapy"; A. H. Hasbrook, chief of the Institute's Flight Research Operations, will deliver a paper on "Design for Impact Survival—New Aspects," and J. R. Dille, M.D. and P. W. Smith will discuss "New Aerial Applicator Considerations."

These men will be joined by Charles A. Berry, M.D., chief of Center Medical Programs at NASA's Manned Spacecraft Center, in Houston, "Progress Report on Project Gemini"; John W. Ord, Lt. Col., USAF, MC, chief of cardiovascular service at Wilford Hall USAF Hospital, Lackland Air Force Base, "The Manned Orbiting Laboratory," and C. C. Gullett, M.D., director of medical services and safety engineering for Trans World Airlines, "Supersonic Flight and the SST."

On Thursday, the members of the association will present a Clinical Symposium on Trauma. Among the subjects to be covered are "Problems in Anesthesia and in Traumatic Shock"; "Abdominal Injuries," and "Thoracic Surgery."

The Association was established in 1954 to promote general aviation safety. Membership is open to all licensed physicians who are members of medical societies approved by the board of directors. Physicians who are not actually pilots but who have a genuine interest in aviation may hold associate membership in the Association. Total current membership now exceeds 1,700 persons. Of these, 40 are practicing physicians in Iowa.

As Regards Health Subjects

The Actions of the 1965 General Assembly Were Mostly Good

The longest regular session of the Iowa General Assembly ended on June 4, 1965. A complete report on the health matters that it considered would be impossible in the space available here, but the following is a summary of the dispositions that were made of the major proposals.

Medical Aid to the Aged. A deficiency appropriation of $320,000 was voted so that the MAA program might continue until the end of the current fiscal year, on June 30, 1965, and an appropriation of $4,000,000 per year was voted for the ensuing biennium. That sum, together with federal matching funds, should enable MAA to go on, uncurtailed. At present, about 8,500 elderly Iowans have been granted eligibility, and it is reliably estimated that the number will reach 10,000 at some time in the not too distant future. The appropriation which has been voted couldn't be expected to finance full health benefits for that increased number of people, but it seems likely that some of the costs of hospitalization and nursing-home care now met by MAA will be paid for under other programs.

The biggest legislative disappointment for Iowa health groups was the failure of the General Assembly to make it mandatory that the MAA program continue to be administered by a non-governmental fiscal agent. An all-out effort was made to get the Legislature to retain language which would have required continuation of the fiscal-agent arrangement, but that proposal was defeated in the Senate by a 31-26 margin. It seems now that the fiscal-agent arrangement will be discontinued in October of this year.

The Iowa Medical Society feels that such a change would be unfortunate, since the fiscal-agent procedure has worked very well throughout the 19 months that the MAA program has been in operation. We believe that the work of Hospital Service Inc. of Iowa (Blue Cross) as fiscal agent has effected a tax saving for the State of Iowa, and that it provides the best technic for governmental dealings with the various health vendors. The Iowa Medical Society hopes that the State Board of Social Welfare will consider retaining the MAA fiscal agent for at least another year. If new federal legislation for the aged is enacted, the Congress may completely revise the present system of paying health-care costs for these people. As now written, HR6675 would establish a new method for administering the programs at the state level, letting the Secretary of Health, Education and Welfare enter into agreements with organizations for the local administration of each program. In view of the near-certainty that the new federal legislation will require changes that can't be accurately anticipated, it would seem wise to keep the present wholly satisfactory arrangement until the federal requirements are established.

Reorganization of the State Board of Health. The General Assembly enacted a law which will establish a State Board of Health composed of nine persons learned in health-related disciplines. The new measure makes the Board a policymaking body, rather than an advisory one. It was originally hoped that the medical profession might be assured of four M.D. members, but because of opposition to the naming of specific groups to be represented on the Board, a compromise bill was enacted. The Iowa Medical Society trusts that the new Board of Health will continue to include adequate representation from the medical profession.

Hospital Advisory Council. To date, the Iowa Hospital Advisory Council has been composed of 17 persons responsible for advising the State De-

partment of Health on expenditures of federal Hill-Harris Act funds for hospital construction. By law, four doctors of medicine have been selected from a list submitted by the Iowa Medical Society, to serve on that Council. Newly adopted federal legislation, however, requires that each state council include equal numbers of consumer representatives and professional members. Some interest was expressed in creating a council composed of just 12 members—six professionals and six non-professionals—but the bill enacted, with IMS support, added enough consumers to the previous council to meet the requirements of federal law.

Child Abuse. A law was enacted requiring reports from hospitals, physicians and almost all other health practitioners regarding suspected cases of child abuse. Reports will be submitted to the respective county departments of social welfare for investigation. The law prescribes no penalty for those who fail to report.

Licensing of Physical Therapists. A bill was enacted to license physical therapists. The Board of Physical Therapy Examiners created by the new law will include one medical doctor and three physical therapists.

Mandatory PKU. The General Assembly considered several proposals that would have required phenylketonuria testing for all newborn infants. The one finally passed simply declares that it is state policy for all newborns to be tested for PKU.

Exempting County Medical Examiners from IPERS. Under a ruling of the Iowa Employment Security Council, physicians serving as county medical examiners or as deputy county medical examiners have been required to pay into the Iowa Public Employees' Retirement System. At the urging of the Iowa Medical Society, a bill relative to IPERS was amended to exempt those physicians from the obligation to pay into that fund.

Protective Eyeglasses for School Children. Legislation to require school children to wear protective eyeglasses while participating in certain classes—i.e., shop, chemistry, etc.—was signed into law.

Free Choice of Physician Under Workman's Compensation. As originally introduced, this bill would have given the employee free choice of physician under Workman's Compensation. Because of strong opposition from employers against such a change, however, a compromise was enacted which will permit the employee to retain a physician of his own choice, at his employer's expense, if the employee is dissatisfied with the disability determination made by the employer's physician.

Iowa Mental Health Authority. A bill was enacted creating an "Iowa Mental Health Authority" so as to take advantage of funds available under federal mental health programs. The new law creates a Committee on Mental Hygiene that is to contain substantial medical representation, including one member of the IMS Subcommittee on Nervous and Mental Diseases. To some degree, this legislation clears up the confusion that has existed regarding responsibilities for implementing federal mental health programs in Iowa.

Mandatory Coverage of Podiatrists' Services by Blue Shield. A bill that purports to require Blue Shield to pay podiatrists for covered services that they have rendered to Blue Shield subscribers was enacted over the opposition of Iowa Medical Society and Blue Shield.

No Premium Tax on Blue Cross/Blue Shield. Although the state administration had included a 2-per cent tax on Blue Cross/Blue Shield premiums as a part of its tax-revision plan, the General Assembly failed to levy it. In fact, no such bill reached the floor of either house, since insufficient votes were available to get it out of committee.

Various Appropriations. The Legislature appropriated funds for the State Board of Regents and the Departments of Health and Social Welfare which, though they fell short of the amounts for which those agencies had asked, appear adequate in view of the levels of appropriations required for other state services. Specifically, it is felt that appropriations for capital improvements at institutions controlled by the Board of Regents will probably permit the construction of a new basic-sciences building at Iowa City. It, in turn, will allow for an increase in the first-year class at the U. of I. College of Medicine.

A substantial increase in the appropriations given to the State Department of Health will enable it to be of greater service to physicians and to the public.

Appropriations for the State Board of Social Welfare should facilitate the establishment of a vendor medical program for recipients of Aid to the Disabled, as well as permit vendor medical programs for other categorical recipients to continue on the present basis.

CONCLUSION

The IMS watched other legislative proposals, including bills and amendments supported by various interests. It is quite apparent that the medical profession needs to become increasingly concerned about candidates for election to the Iowa House and Senate. Proposals regarding health matters are becoming increasingly numerous at the state level, and so much of our time and effort has been devoted to omnibus health legislation in the Congress that we perhaps have taken too lightly our individual responsibilities in our state and in our respective counties.

Throughout the next few months, and up to the 1966 election, the IMS Committee on Legislation will encourage physicians to take more and more interest in state legislation and in the candidates' views on health matters.

THE DOCTOR'S BUSINESS

Life Insurance Settlement Options

HOWARD D. BAKER
Waterloo

The method for settlement of your life insurance contract or contracts is of major importance, along with the type of contract and the company from which you purchase it. Following are brief summaries of the options available on most policies today. Selecting the proper option or combination of options is almost as important as having an adequate amount of insurance.

1. THE LUMP-SUM OPTION. This is self-explanatory. It should be used primarily to provide needed cash immediately, when cash isn't available to your beneficiary from other sources.

2. THE INTEREST OPTION. Under this arrangement, the company retains the proceeds and pays a stipulated rate of interest on them. Usually the right to withdraw the proceeds, totally or in part, is vested in the beneficiary. This option is advantageous when income, or cash, won't be needed immediately but will be later. This option can be changed to another at a stipulated time or at the beneficiary's discretion.

3. INCOME FOR A FIXED PERIOD. Under this plan, the company is instructed to pay specified amounts to the beneficiary at regular intervals for a fixed length of time. The amount of income is governed by the period elected and the proceeds available. The commonest use for this option is to provide a monthly income for the wife during the dependency of the children.

4. INCOME OF A FIXED AMOUNT. This arrangement pays a stipulated amount at regular intervals until the proceeds have been exhausted. The number of installments is governed by the proceeds in the company's hands and the stipulated rate of interest. This option is commonly used where a fixed amount of income is more important than the period during which it is to be paid.

5. THE LIFE-INCOME OPTION. This plan provides a stated income to the beneficiary for as long as he or she may live. The amount of each payment will depend upon the age and sex of the beneficiary, and upon whether it is agreed that payments are to cease at the death of the primary beneficiary or are guaranteed to continue for a minimum of five, 10 or 20 years.

Provided that each payment equals or exceeds a stated minimum, the frequency of payments under any of these options may be annual, semi-annual, quarterly or monthly.

Rather than by any single one of the above alternatives, the proceeds of an insurance policy can be settled by nearly any combination of options. For example, on a $12,000 policy it would be possible to have $2,000 paid in cash; $5,000 of the proceeds retained at interest until a stated date, and then paid as a life income with payments guaranteed for five years; $2,000 paid out in installments for a fixed period of five years; $1,000 paid out at the rate of $50 per month until exhausted; and the remaining $2,000 paid as a life income with payments guaranteed for 20 years. This example illustrates the use of six options on one policy. Although such a combination of arrangements would be uncommon, it demonstrates the flexibility that is possible.

You should utilize the settlement options which best fit your individual program. They will remain subject to change, to suit any change in your situation. Your decision must be governed by your family's requirements, the beneficiaries' ages and also the provisions of your estate plan. For this reason, your insurance counselor and your attorney should both review your options in order to assure the accomplishment of your goals without adversely affecting your estate plan.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., COMMISSIONER

Safety Suggestions for Farmers Who Use Pesticides

In order to combat the western corn rootworm, thousands of Iowa farmers apply organophosphate-based insecticides. Unfortunately, farmers are becoming complacent about the dangers connected with pesticides because some chemical manufacturers have advertised that their products are so safe that users need not wear protective devices such as glasses or special clothing while filling the applicator.

It is necessary for users to understand the dangers that pesticides pose, and the necessity for following rigid safety precautions when using them. Iowa State University's ROOTWORM CONTROL BULLETIN I.C.134 states that organophosphorus compounds are generally more hazardous than other soil insecticides applied by farmers. The exposure to these compounds is greatest when the material is being put into the machines and when the machine is being calibrated. The following instructions are on the label for organophosphorus pesticides that has been approved by the U. S. Department of Agriculture:

"CAUTION: Avoid contact with skin, eyes or clothing. Avoid prolonged breathing of dust. Keep out of reach of children. Avoid contamination of milk and foods. Wash thoroughly after handling. May be absorbed through skin. Harmful if swallowed."

For personal protection, all users should wear (1) rubber gloves, (2) long-sleeved shirts and (3) goggles. If they are to work in a gusty wind, they should use (4) a proper respirator.

Floyd Andre, Ph.D., dean and director of the College of Agriculture, Iowa State University, made the following safety suggestions, according to the DES MOINES SUNDAY REGISTER for May 2, 1962. They continue to be good ones:

Wear clean clothes daily when handling these materials. Do not wear clothes with cuffs which might collect deposits of the insecticide.

Wear a long-sleeved shirt; keep sleeves rolled down.

Wear either rubber or cotton gloves. If you use cotton gloves, wash them or destroy them by burning, once the gloves have become dusty with the chemical. Change to clean cotton gloves often.

For extra protection, consider wearing eye goggles, and nose-mask type or face-mask respirator. Change filters and cartridges as directed by the manufacturers of these devices.

Keep ready a supply of water to wash off the pesticide immediately in case of personal contamination. After handling organophosphorus insecticides, wash all exposed skin thoroughly before you eat, drink or smoke.

Chemical manufacturers have listed safety precautions on the label. Read and understand these warnings.

It is wise for you to inform your family doctor that you intend using pesticides. Thus you can get help more quickly in case of any mishap.

Always stand upwind when filling the applicator with insecticide. Be extremely careful about wearing gloves when you make calibrations or adjustments on the chemical applicator.

Be conscious of possible pesticide drift away from fields that you are about to treat.

The State Department of Health approves of these safety precautions, and wishes to emphasize the need for care in handling pesticides.

Physicians may write for the CLINICAL HANDBOOK ON ECONOMIC POISONS—EMERGENCY INFORMATION FOR TREATING POISONING, published by the Toxicology Section, USPHS Communicable Disease Center, Atlanta. It gives the signs and symptoms of poisoning in man, and the routes of absorption; it outlines the treatment for exposures to insecticides of the organic phosphorus, carbamate, chlorinated hydrocarbon and botanical types, rodenticides, fungicides and herbicides; and it discusses solvents such as kerosene and xylene. (U. S. Government Printing Office, Washington, D. C. 20402. 55¢.)

Arthropod-Borne Encephalitis

A pilot program of mosquito surveillance has been established along the eastern border of Iowa by the Iowa State Department of Health, the U. S. Public Health Service, the City of Davenport, the Scott County Extension Service and Iowa State University Entomology Extension. Dr. Harold Gunderson, extension entomologist, reports that Culex tarsalis larvae were observed on May 27, 1965, in pools left from the Mississippi River flood. That finding is of interest since this species of mosquito is the principal vector for arthropod-borne encephalitis in horses and man.

There were 1,344 cases of encephalitis in Iowa horses reported during 1964, but no human cases. Thus it is certain that the virus was present in most areas of the state last year. Although domestic and wild birds serve as the primary reservoir for the virus, mosquitoes carry it from birds to man and horses. The disease is not generally spread from horses to man because of the low concentration of viremia in infected horses. However, horses may serve as indicators of the degree of virus activity in an area.

This observation marks the beginning of the 1965 summer-early fall encephalitis surveillance.

AVAILABLE FROM THE STATE DEPARTMENT OF HEALTH

For venereal disease control
- Procaine penicillin (aqueous or oil suspension)
- Benzathine penicillin G (Bicillin)
- Achromycin (250 mg. capsules)

Immunizing agents
- Triple toxoid
- Diphtheria-tetanus toxoid (Combined, absorbed or precipitated—Adult type)
- Salk and Sabin poliomyelitis vaccines
- Typhoid vaccine triple (Typhoid, para A and para B)
- Smallpox vaccine

Rabies control materials
- Duck embryo anti-rabies vaccine
- Anti-rabies serum

Histoplasmin

Snake anti-venom (kept at poison center and sub-centers)

Gamma globulin (for protection of people exposed to measles, German measles, or infectious hepatitis, if the risk is sufficiently great)

For detailed information, see the April, 1965, JOURNAL, *pages 225-227, or telephone the Department.*

Morbidity Report for Month of May, 1965

Diseases	1965 May	1965 Apr.	1964 May	Most Cases Reported From These Counties
Diphtheria	1	0	0	Woodbury
Scarlet fever	392	419	469	Jefferson, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	833	936	2084	Dubuque, Polk, Pottawattamie
Whooping cough	8	2	77	Buena Vista, Des Moines, Scott
Brucellosis	10	4	6	Dubuque, Scott
Chickenpox	476	507	490	Clay, Des Moines, Dubuque, Polk
Meningococcic meningitis	3	1	0	Black Hawk, Lyon, Wapello
Mumps	448	526	1269	Des Moines, Hancock, Pottawattamie, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	53	102	29	Des Moines, Dubuque, Fayette, Muscatine, Scott
Rabies in animals	32	27	53	Dubuque, Hancock, Johnson, Mahaska, Poweshiek, Story
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	24	20	39	For the state
Syphilis	82	52	78	For the state
Gonorrhea	231	157	130	For the state
Histoplasmosis	3	2	1	Dallas, Marion, Polk
Food intoxication	0	0	0	
Meningitis (type unspecified)	3	0	2	Scott, Winnebago, Woodbury
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	0	0	Jefferson
Salmonellosis	3	9	6	Linn, Story, Wapello
Tetanus	0	0	1	
Chancroid	0	0	0	
Encephalitis (type unspecified)	5	0	2	Buchanan, Clinton, Jackson, Mitchell
H. influenzal meningitis	0	0	0	
Amebiasis	2	0	2	Boone, Johnson
Shigellosis	1	0	9	Story
Influenza	86	260	198	Polk

Woman's Auxiliary News

The Doctor's Wife

By Edgar Guest

I'm sorry for the doctor's wife
She leads a most unsettled life,
Though married, she must stay at home,
And take the calls upon the phone,
And in her sweetest manner say,
I'll send him over right away.

She cannot with assurance plan
A meal as others can,
Or think with confidence that she
Will have her husband home for tea.

And when he's home she cannot say.
The doctor has no night or day,
To schedule time for work or play
And thus it is his faithful wife
Must lead a most unsettled life.

News From Around the Hawkeye State

Black Hawk County

The Black Hawk County Medical Auxiliary met at the Herbert Shulman home for its May breakfast and installation of officers. Those installed were: Mrs. Robert Buckles, president; Mrs. Edward Sitz, president-elect; Mrs. Dwight Conklin, first vice-president; Mrs. Thomas Board, second vice-president; Mrs. Neil Williams, recording secretary; Mrs. Oscar Lanich, Jr., corresponding secretary; and Mrs. Richard Wells, treasurer. The retiring president is Mrs. Eugene Goldberg.

Johnson County

Dr. Robert Hardin was guest speaker at the May meeting of the Woman's Auxiliary to the Johnson County Medical Association. The luncheon was held at the University Athletic Club. Dr. Hardin discussed the "Iowa College of Medicine."

Dr. Frank Ober, president of the IMS, is shown congratulating the three winners of the 1965 Iowa AAPS Essay Contest. They are, from the left: Miss Rebecca Jean Good, of Boone, second place ($50); Mr. Paul Raymond, of Boxholm, first place ($100); and Mr. Rick Peterson, of Harlan, third place ($25). In the national essay contest, Miss Good received sixth place, Mr. Raymond received seventh place, and Mr. Peterson was awarded an Honorable Mention.

Mahaska County

The Mahaska County Medical Society Auxiliary was informed at its May luncheon meeting that the official visit of Mrs. D. A. Mater, a state officer, had been postponed until fall of this year. Mrs. Ellis Duncan presided for the business session held at the Downing Hotel. "Thank you" letters were read from the Marion County Auxiliary for monetary gifts for convention decorations and from Mahaska County Medical Society for the carnations presented on Doctor's Day.

Mrs. Duncan, Mrs. G. S. Atkinson and Mrs. L. F. Catterson gave their reports on the state meeting held in Des Moines.

It was announced that an application for a nurse's training loan had been received, and also that the Future Nurses Club had enjoyed a dinner at Canary Cottage, in observance of Health Career Day.

Polk County

Mrs. Paul From was installed as president of the Woman's Auxiliary to the Polk County Medical Society when the group met for a brunch on Friday, May 14, at the Wakonda Club, Des Moines.

Other new officers installed were Mrs. Olin Elliott, president-elect; Mrs. Richard Moore, first vice-president; Mrs. Loren Peterson, second vice-president; Mrs. James Ryan, Jr., recording secretary; Mrs. Edward Hertko, corresponding secretary; and Mrs. Donald Young, treasurer. The program, entitled "Musical Medics," had been arranged by Mrs. Daniel Glomset, chairman of the committee. Musical selections by Lawrence O. Ely, M.D., and Stewart O. Olson, M.D., were highlights of the meeting. Past-presidents of the Polk County Auxiliary were honored at the brunch.

Scott County

Scott County Medical Auxiliary members shared coffee in the home of Mrs. Richard Daut, Davenport, and the pleasure of turning over an $850 check to the Scott County Mental Center. Mrs. Bernard Goldman, state mental health chairman, and Dr. Vera French represented the center in receiving the check. The contribution was raised by Auxiliary members through their sale of "Doctor to Doctor" Christmas greeting cards designed by Mrs. Erling Larson, Jr., an Auxiliary member.

Woodbury County

The regular meeting of the Woodbury County Medical Auxiliary was held May 12, following a morning coffee at the home of the president, Mrs. H. E. Rudersdorf.

The program consisted of a talk by Mayor Reeder, who is a Sioux City physician. He spoke on "Medicine and Politics." Mayor Reeder's father is a past-president of the Iowa Medical Society.

Members at Large

Mrs. R. H. Palmer of Postville, Iowa, attended a silver anniversary luncheon of the Lake County Medical Auxiliary, at the Woodmar Country Club, Hammond, Indiana, on May 19. Past-presidents were the honored guests. Mrs. Palmer was president of the Indiana Auxiliary in 1957-1958.

Mrs. H. Carter Dunstone, state president of Indiana Medical Auxiliary, was speaker for that occasion.

Thanks to Workers in the Flood Emergency

Mr. John E. Cosgrove, assistant director of the Office of Emergency Planning, Washington, D. C., emphasized that the "pay-off point" in Civil Defense Planning is at the local level, in lauding the work done this spring by Iowa Civil Defense personnel, when he addressed the Spring Workshop and Conference of Iowa Civil Defense Directors, in Des Moines, late in May.

"You and others in state and local government in Iowa," he said, "under the able leadership of your distinguished Governor Harold Hughes, are to be commended for your work. I know you are the first to acknowledge the selfless devotion displayed by the thousands of students and other volunteer workers.

"The fact that these great natural disasters did not destroy still more property and—more importantly—did not take additional lives is a tribute to the careful advance planning and preparedness, and to the expeditious use of preparedness measures.

"We all know too—as awful as were the natural disasters in 1965—that man-made disasters could be infinitely worse. Your federal government thinks nuclear war unlikely. It is, however, a possibility. Because it is a possibility, we must plan and we must prepare against it. . . ."

AMA-ERF Now Aiding One in Six

The American Medical Association Education and Research Foundation reported to the AMA House of Delegate meeting in Miami that one out of every six medical students, interns and residents in the U. S. is now receiving financial assistance from the Foundation's loan fund.

Iowa Health Legislation 1965

Your copy of "In the Public Interest" will give you a very comprehensive report on the major pieces of health legislation which have required the greatest amount of attention from the IMS Committee on Legislation.

Newly-Installed State Auxiliary Officers

In front, from left to right, are Mrs. F. M. Skultety, Iowa City, councilor for District VIII; Mrs. B. M. Merkel, Des Moines, treasurer; Mrs. L. H. Prewitt, Ottumwa, recording secretary; Mrs. M. E. Olsen, Minden, second vice-president; Mrs. S. M. Korson, Independence, president-elect; and Mrs. Henry Boe, Sioux City, president. In back of them, is Mrs. W. H. Evans, Youngstown, Ohio, the national president, who conducted the installations.

1965-1966 Officers

President ..... Mrs. Henry Boe
3919 Orchard Street, Sioux City 51104

President-Elect ..... Mrs. S. M. Korson
Box 111, Independence 50644

First Vice-President ..... Mrs. R. E. Hines
3525 Witmer Parkway, Des Moines 50310

Second Vice-President ..... Mrs. M. E. Olsen
Minden 51553

Recording Secretary ..... Mrs. L. H. Prewitt
33 Birchwood Hills, Ottumwa 52501

Treasurer ..... Mrs. B. M. Merkel
730 Polk Boulevard, Des Moines 50312

Corresponding Secretary ..... Mrs. H. C. Leiter
2400 E. Solway, Sioux City 51104

Finance Secretary ..... Mrs. E. A. Vorisek
6205 Woodland Road, Des Moines 50312

Historian ..... Mrs. H. G. Decker
3328 Douglas Avenue, Des Moines 50310

Parliamentarian ..... Mrs. D. C. Wirtz
4130 River Oaks Drive, Des Moines 50312

COUNCILORS:

Second District ..... Mrs. J. B. Dixon
125 Lake View Drive, Mason City 50401

Third District ..... Mrs. Alexander Bushmer
Orange City 51041

Fifth District ..... Mrs. N. A. Schacht
1025 North 23rd Street, Fort Dodge 50501

Sixth District ..... Mrs. Herbert Shulman
101 Martin Road, Waterloo 50701

Seventh District ..... Mrs. F. M. Skultety
1434 Grand Avenue, Iowa City 52241

Eighth District ..... Mrs. J. F. Bishop
212 Hillcrest Avenue, Davenport 52803

Ninth District ..... Mrs. D. A. Mater
302 South Fourth Street, Knoxville 50138

AMA-ERF Fund Raising Projects

Note Paper
Playing Cards
Christmas Cards

Mrs. R. L. Wicks, Chairman
204 South Story Street, Boone 50036

or

Woman's Auxiliary Office
529-36th Street, Des Moines 50312

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

President-Elect—Mrs. S. M. Korson, Box 111, Independence 50644

Recording Secretary—Mrs. L. H. Prewitt, 33 Birchwood Hills, Ottumwa 52501

Corresponding Secretary—Mrs. H. C. Leiter, 2400 E. Solway, Sioux City 51104

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Veverka, Prairie City 50228

Co-Editor—Mrs. R. R. Carlson, 826 Sherman Drive, Ankeny 50021

MINUTES OF THE 1965 SESSIONS OF THE HOUSE OF DELEGATES

Iowa Medical Society

Des Moines, Iowa—April 11-14, 1965

(Alphabetical Index to the Minutes Can Be Found on page 451)

SUNDAY SESSION, APRIL 11, 1965

The House of Delegates of the Iowa Medical Society was called to order by the speaker, Dr. Paul M. Kersten, of Fort Dodge, at 9:10 a.m., Sunday, April 11. The House of Delegates approved the taking of attendance by signed registration cards. There were 101 delegates, 12 voting alternates and 16 ex-officio members present.

County	*Delegate*	*Alternate*
Adair	A. J. Gantz	
Adams	C. L. Bain	
Allamakee		
Appanoose	E. A. Larsen	
Audubon		
Benton		
Black Hawk	A. M. Dolan	
	C. D. Ellyson	
	F. G. Loomis	
	L. L. Zager	
	Herbert Shulman	
Boone	E. E. Linder	
Bremer	V. H. Carstensen	
Buchanan	P. J. Leehey	
Buena Vista	T. E. Shea	
Butler	F. A. Rolfs	
Calhoun	C. R. Wilson	
Carroll	H. L. Skinner	
Cass	D. E. Wilcox	
Cedar		
Cerro Gordo	J. F. Paulson	
	L. J. Kirkham	
	W. N. Hanson	
Cherokee	H. J. Fishman	
Chickasaw		
Clarke	G. I. Armitage	
Clay		
Clayton		
Clinton	M. E. Barrent	
	W. H. Ash	
Crawford	R. A. Huber	
Dallas-Guthrie		E. E. Lister
	R. J. Peterson	
Davis	J. R. Scheibe	
Decatur-Ringgold	E. E. Gamet	
	D. E. Mitchell	
Delaware	J. E. Tyrrell	
Des Moines	J. L. Saar	
	J. F. Foss	
Dickinson	E. L. Johnson	
Dubuque		
	K. K. Hazlet	
	D. A. Howell	
Emmet	H. A. Lindholm	
Fayette	R. S. Jaggard	
Floyd		D. L. Trefz
Franklin	R. E. Munns	
Fremont		
Greene	R. W. Burke	
Grundy		
Hamilton	G. A. Paschal	
Hancock-Winnebago	L. R. Fuller	
Hardin	John Sear	
Harrison	J. W. Barnes	
Henry	H. M. Readinger	
Howard		
Humboldt		
Ida		
Iowa		
Jackson		
Jasper	J. W. Billingsley	
Jefferson	K. H. Strong	
Johnson	K. R. Cross	
	G. W. Howe	
	K. J. Judiesch	
	J. M. Layton	
		C. E. Radcliffe
		Michael Bonfiglio
		G. M. Wyatt
	P. M. Seebohm	
Jones	L. D. Caraway	
Keokuk		
Kossuth	R. E. Jongewaard	
Lee	L. C. Pumphrey	
	G. C. McGinnis	
Linn	J. J. Redmond	
	R. M. Chapman	
	J. J. Keith	
	H. R. Hirleman	
	W. J. Robb	
Louisa		
Lucas	T. C. White	
Lyon		
Madison		
Mahaska		
Marion		Peter Van Zante
Marshall	L. O. Goodman	
		H. E. Sauer
		M. L. Scheffel
Mills		
Mitchell		
Monona	J. L. Garred	
Monroe		
Montgomery	Oscar Alden	
Muscatine	C. P. Phillips	
O'Brien		I. E. Brown
Osceola		
Page	W. G. Kuehn	
Palo Alto		
Plymouth	J. P. Trotzig	
Pocahontas	C. J. Smith	
Polk	N. W. Irving, Jr.	
	E. T. Burke	
	W. J. Morrissey	
		R. J. Reed
	J. G. Thomsen	
	W. R. Hornaday, Jr.	
	R. B. Stickler	
		J. W. Green
	A. N. Smith	
	J. H. Kelley	
	M. E. Alberts	
Pottawattamie		
	I. J. Hanssmann	
	U. J. Collignon	
Poweshiek		
Sac		
Scott	Erling Larson	
	B. R. Goldman	
	J. F. Bishop	
	W. S. Pheteplace	
Shelby		J. H. Spearing
Sioux	T. E. Kiernan	
Story	G. E. Montgomery	
	R. H. Heise	
Tama	A. J. Havlik	
Union-Taylor	D. L. York	
	R. W. Boulden	
Van Buren		
Wapello	E. W. Ebinger	
	K. E. Lister	
Warren	Amalgamated with Polk County	
Washington	E. D. Miller	
Wayne	C. N. Hyatt	
Webster	H. H. Kersten	
	L. J. O'Brien	
Winneshiek		
Woodbury	A. H. Kelly	
	R. C. Larimer	
	V. R. Heimann	
	J. P. Tiedeman	
	P. M. Cmeyla	
Worth		
Wright	C. P. Hawkins	

LIAISON DELEGATE
R. H. Kuhl
OFFICERS PRESENT AS EX-OFFICIO MEMBERS
OF THE HOUSE

O. D. Wolfe	F. G. Ober
R. F. Birge	S. P. Leinbach
C. W. Seibert	J. H. Sunderbruch
J. L. Powers	R. L. Wicks
C. N. Cooper	L. W. Swanson
H. J. Smith	E. M. Smith
P. M. Kersten	R. C. Hardin
C. V. Edwards, Sr.	G. H. Scanlon

Minutes of the April 29, 1964, meeting of the House of Delegates were approved as published in the July, 1964, JOURNAL OF THE IOWA MEDICAL SOCIETY.

The Speaker of the House of Delegates introduced physicians who were serving in the House for the first time, and also the individuals who were seated at the head table. He announced reference committee appointments.

Reports as published in the 1965 HANDBOOK FOR THE HOUSE OF DELEGATES were approved.

The seven resolutions that had been published in the HANDBOOK beginning at page 66, were excluded, since they were to be presented at a later time under the heading of "New Business."

(The following are reports previously published in the DELEGATES' HANDBOOK.)

Reports of Officers

FROM THE OFFICE OF THE SECRETARY

The duties of this office include maintaining membership and dues records; conducting the official correspondence; and notifying members of meetings, officers of their election, and committee members of their appointment and duties. The secretary is also responsible for preparing minutes of all official meetings of the Society. Insofar as is in his power, he uses the printed matter, correspondence and influence of his office to aid the councilors in organizing and improving the component societies, and in extending the power and usefulness of the Society.

The following points up some of the more important activities of the office of the secretary:

1965 ANNUAL MEETING

The Program Committee has completed the program for the 1965 annual meeting and it appears in the March issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY. Hand programs will be distributed at the time of the meeting. The office has cooperated with district councilors in organizing their caucuses, in preparation for the annual meeting, including organization of the Nominating Committee.

HOUSE OF DELEGATES

Proceedings of the 1964 sessions of the House of Delegates were published in the July, 1964, JOURNAL. The usual administrative procedures in connection with the House of Delegates directives have occurred. As a part of the 1965 annual meeting, the House of Delegates will hold its first session on Sunday, April 11, at 9:00 a.m. Reference committee hearings will begin as soon as possible on Sunday following adjournment of the House. The final session of the House of Delegates will be held at 8:00 a.m., Wednesday, April 14. All sessions of the House of Delegates will be held at the Savery Hotel.

EXECUTIVE COUNCIL

Three meetings of this interim policy-making body have been held since the 1964 annual meeting, and its fourth session will be held on March 18. Progress reports from important committees of the Society were presented to the Executive Council for its action in some instances and for its information in others. These committees will report to the House of Delegates.

JUDICIAL COUNCIL

The Judicial Council has held regular meetings, at three-month intervals, and two special meetings. A final meeting is scheduled for March 18. The chairman, Dr. K. E. Lister, has written a report that appears elsewhere in this booklet. The principal responsibilities of the Judicial Council are to approve applications for IMS membership, and to decide various questions relating to membership or ethics, and on occasion, to discipline members of the Society.

COMMITTEES

The Society has 51 standing and special committees, most of which have met at least once during the year. Reports covering the activities of these groups appear elsewhere in this HANDBOOK, or will be presented as oral reports at the first session of the House of Delegates in April. To date, approximately 70 official committee meetings have been held, and prior to the annual meeting there will be numerous additional ones. These totals do not include informal meetings of committee members, or the conferences that have taken place by telephone. These latter approximate 125.

LIAISON WITH COUNTY MEDICAL SOCIETIES

Fall Conference for County Society Officers. On September 13, 1964, the IMS was host to approximately 140 physicians who represented county medical societies. These included county society presidents, secretaries, deputy councilors, legislative contact men, delegates, alternates, Blue Shield liaison physicians, county committee chairmen, and State Society officers and committee chairmen. Society officers, committee chairmen and guest speakers presented talks on Society projects and activities and important issues affecting organized medicine. Discussions concerned medicine and religion, medicine and the law, MAA in Iowa, the Individual Responsibility Plan, Iowa's public health needs, mental health, and other pertinent topics.

During the fall and winter months, the president of the Society met with 20 county medical societies to review various subjects and projects of interest to the membership. In addition, other Society officers and staff attended various county medical society meetings throughout the state.

FIELD SERVICE

The Society's field secretary, Mr. Gerald Buckles, has been active during the past year in contacting county medical societies and individual doctors, as well as other organizations, to promote numerous projects. The major part of his time has been devoted to activating county societies, individual physicians, and allied groups to implement programs in opposition to the enactment of King-Anderson type legislation, as well as other projects in the public interest.

MAILINGS

Mailings during the year included: General News Bulletins, 7; Legislative Bulletins, 2; Legislative Contact Men, 1; "In the Public Interest" to members of the Iowa Legislature, Iowa's Congressional delegation in Washington, and all news outlets, 12; Deputy Councilor Newsletters, 3.

NATIONAL, REGIONAL, STATE CONFERENCES

AMA 1st National Congress on Mental Illness and Health, Conference on Medical Quackery, Special Session, AMA House of Delegates, Annual Meeting, Chairmen of State Medical Society Committees on Medical Education and Hospitals, American Psychiatric Association Conference, AMA Annual Conference of State Mental Health Representatives, National Medicolegal Symposium, 18th National Conference on Rural Health, Hawkeye Science Fair, Diet Therapy Conferences, State Convention, Licensed Practical Nurses Association of Iowa, AMA Kerr-Mills Conference, Council on Occupational Health, AMA Conference on Aging, IAGP Spring Conference, Annual Meeting, Iowa Association of Medical Assistants, AMA Clinical Session, Governor's Planning Conference Re Mentally-ill Offenders, Linn County Chamber of Commerce Meeting, AMA Annual Meeting, Governor's Conference on Physical Fitness, 10th Annual Conference on Mental Health, North Central Medical Conference, Annual Meeting, Iowa Div., American Cancer Society, AMA Committee on Osteopathy and Medicine, Chamber of Commerce Leadership Conference, AMA Conference on Blood Banking, AMA Conference on Areawide Health Facilities Planning, AMA Interim Session, Vocational Rehabilitation Conference, Fourth National Congress on Voluntary Health Insurance and Prepayment, Annual Conference, National Association of Blue Shield Plans, Annual Meeting, IAGP, Midwestern Regional Clinical Conference on Physical Fitness, Annual Meeting, Iowa Interprofessional Association, AMA National Stroke Congress, AMA Council on Voluntary Health Agencies, IMS Legislative Conference, Legislative Candidates Seminar, AMPAC Conference, MSEA & AMA Institutes, AMA Public Relations Institute, IMS Public Relations Planning Conference, AMA National Conference of Health Education Goals, Health Division Conference, Iowa Welfare Association, Iowa Division, American Cancer Society, World Medical Association, Governor's Public Health Advisory Committee, Health Legislation Meeting, National Chamber of Commerce, AMA Congress on Occupational Health, Sixth National Conference on Medical Aspects of Sports, AMA, AMA Second National Congress on Mental Health, Meeting of Executive Secretaries, North Central Conference States, AMA Clinical Session, 15th National Conference on Disaster Medical Care, National Conference on Medical Aspects of Driver Safety and Driver Licensing, National Association of Blue Shield Plans Annual Program Conference, Smith, Kline and French Speakers Clinic, Sixth Annual Congress of the Professions.

IOWA REPRESENTATION AT NATIONAL LEVEL

The Society has maintained its close liaison with the AMA and other national organizations. The IMS is represented in the AMA as follows:

Dr. Donovan F. Ward, of Dubuque, president of the AMA;

Dr. S. P. Leinbach, of Belmond, vice-chairman of the Council on Rural Health;

Dr. D. C. Conzett, of Dubuque, member of the Committee on Federal Medical Services;

Dr. J. G. Thomsen, of Des Moines, chairman of the Committee on Medical Quackery.

Three IMS staff members are active in the National Association of Medical Society Executives. Mr. Donald L. Taylor, executive director, is a past president and has served on its Board of Directors, its Nominating Committee and several other committees, in addition to participating in several seminars sponsored by the Association. Miss Tina Preftakes, assistant to the director, is a member of the Editorial Board of THE EXECUTIVE, the house organ of the National Association of Medical Society Executives.

SERVICES TO THE WOMAN'S AUXILIARY

Services and facilities of the IMS headquarters office are available at all times to the Woman's Auxiliary to assist it in implementing its projects. The bulk of this work is handled by Mrs. Hazel Lammey, an executive assistant who is staff secretary to the Auxiliary. The staff assists the Woman's Auxiliary in arranging its annual meeting, preparing its annual reports, and maintaining its membership records and roster, as well as preparing and issuing the WOMAN'S AUXILIARY NEWS.

IMS MEMBERSHIPS

Memberships in the Iowa Medical Society during the year 1964 totaled 2,456 as compared to 2,482 for the preceding year. The 70 counties in which 100 per cent of the county society members held membership in the IMS, represent 67 county societies. The number of eligible non-members decreased by four for a total of 51 for 1964. The number of ineligible non-members increased from 47 in 1963 to 51 in 1964. Physicians retired or not in practice decreased from 82 in 1963 to 66 in 1964. The total membership percentage in 1964 remains at 98.

COUNTY SOCIETIES HAVING 100 PER CENT MEMBERSHIP IN IMS IN 1964

Adair	Grundy	Montgomery
Adams	Hamilton	Muscatine
Allamakee	Hancock-Winnebago	Osceola
Appanoose	Hardin	Page
Audubon	Harrison	Palo Alto
Boone	Henry	Plymouth
Buchanan	Howard	Pocahontas
Butler	Humboldt	Pottawattamie
Calhoun	Ida	Ringgold
Cerro Gordo	Iowa	Sac
Chickasaw	Jackson	Shelby
Clarke	Jasper	Sioux
Clay	Jefferson	Tama
Clinton	Kossuth	Union-Taylor
Crawford	Lee	Van Buren
Dallas-Guthrie	Lyon	Wapello
Davis	Madison	Washington
Decatur	Mahaska	Wayne
Delaware	Marshall	Webster
Dickinson	Mills	Winneshiek
Floyd	Monona	Wright
Franklin	Monroe	
Greene		

1964 IMS MEMBERSHIP RECORD

County	Active Members	Associate Members	Resident Members on Resident License	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage
Adair	3	1	..	..	..	..	100
Adams	4	..	..	..	..	..	100
Allamakee	8	..	..	..	..	1	100
Appanoose	11	..	..	..	..	2	100
Audubon	3	..	..	..	..	..	100
Benton	13	..	..	1	..	..	93
Black Hawk	124	1	..	1	..	..	99
Boone	15	..	..	..	..	..	100
Bremer	16	..	..	1	..	..	94
Buchanan	23	..	..	..	4	..	100
Buena Vista	11	..	..	1	..	..	92
Butler	9	..	..	..	..	..	100
Calhoun	14	..	..	..	..	1	100
Carroll	22	1	.	1	..	..	96
Cass	10	..	..	2	..	..	83
Cedar	8	..	..	1	..	..	89
Cerro Gordo	70	..	..	..	..	..	100
Cherokee	21	..	..	2	11	1	91
Chickasaw	11	1	..	..	..	..	100
Clarke	5	..	..	..	..	..	100
Clay	12	..	..	..	..	..	100
Clayton	8	1	..	2	..	..	82
Clinton	43	2	..	..	2	..	100
Crawford	8	..	..	..	..	..	100
Dallas-Guthrie	24	..	..	..	4	1	100
Davis	12	..	..	..	..	..	100
Decatur	6	..	..	..	..	2	100
Delaware	10	..	..	..	..	1	100
Des Moines	44	2	..	1	..	..	93
Dickinson	7	2	..	..	..	..	100
Dubuque	70	2	..	3	..	..	96
Emmet	12	..	..	1	..	..	92
Fayette	17	..	..	3	..	1	85
Floyd	18	..	..	..	..	..	100
Franklin	6	..	..	..	..	..	100
Fremont	3	..	..	1	..	..	75
Greene	12	..	..	..	..	1	100
Grundy	9	..	..	..	..	..	100
Hamilton	11	..	..	..	1	..	100
Hancock-Winnebago	14	..	..	..	1	1	100
Hardin	15	..	..	..	..	..	100
Harrison	8	..	..	..	..	3	100
Henry	20	..	..	..	4	2	100
Howard	8	..	..	..	..	..	100
Humboldt	7	..	..	..	..	..	100
Ida	6	..	..	..	..	2	100
Iowa	12	..	..	..	..	..	100
Jackson	11	..	..	..	..	..	100
Jasper	24	..	..	..	..	..	100
Jefferson	11	..	..	..	..	1	100
Johnson	232	2	1	5	..	5	98
Jones	10	..	..	1	..	..	91
Keokuk	6	..	..	1	..	..	86
Kossuth	11	..	..	..	..	..	100
Lee	37	..	..	..	..	..	100
Linn	134	5	..	4	..	3	97
Louisa	3	..	..	1	..	..	75
Lucas	6	..	..	..	..	..	100
Lyon	6	..	..	..	..	..	100
Madison	4	..	..	..	..	..	100
Mahaska	18	1	..	..	..	..	100
Marion	15	..	..	2	9	1	89
Marshall	38	..	..	..	..	..	100
Mills	5	..	..	..	3	2	100
Mitchell	12	..	..	1	..	1	92
Monona	10	..	..	..	..	2	100
Monroe	4	1	..	..	..	..	100
Montgomery	11	..	..	..	..	..	100
Muscatine	17	1	..	..	1	1	100
O'Brien	11	..	..	1	..	..	91
Osceola	3	..	..	..	..	..	100
Page	20	..	..	..	9	..	100
Palo Alto	10	..	..	..	..	..	100
Plymouth	12	..	..	..	..	1	100
Pocahontas	7	..	..	..	..	1	100
Polk	332	16	7	2	1	15	99
Pottawattamie	72	..	..	..	1	4	100
Poweshiek	10	..	..	1	..	..	91
Ringgold	1	..	..	..	..	..	100
Sac	7	..	..	..	..	..	100
Scott	103	..	..	1	..	2	99
Shelby	8	..	..	..	..	2	100
Sioux	12	..	..	..	..	1	100
Story	52	1	..	3	..	1	95
Tama	10	..	..	..	..	..	100
Union-Taylor	13	1	..	..	..	..	100
Van Buren	4	..	..	..	..	..	100
Wapello	45	1	..	..	..	..	100
Warren amalgamated with Polk							
Washington	12	..	..	..	..	1	100
Wayne	4	2	..	..	..	..	100
Webster	59	..	..	..	..	2	100
Winneshiek	9	..	..	..	..	..	100
Woodbury	113	3	..	6	..	1	95
Worth	4	..	..	1	..	..	80
Wright	18	..	..	..	..	..	100
	2,401	47	8	51	51	66	98

AMA MEMBERSHIP

The members of the Iowa Medical Society who were active members of the American Medical Association in 1964 numbered 2,345 (including active dues-exempt because of life membership, residency or military service). In addition, 47 held associate memberships, seven held service memberships (in Veterans Administration) and eight held resident membership (members on temporary or resident licenses) in the AMA.

The 2,345 active AMA memberships in 1964 entitled Iowa to three AMA delegates. The 1964 AMA membership was 95.48 per cent of the total Iowa Medical Society membership.

R. F. BIRGE, M.D., *Secretary*

REPORT OF THE TREASURER

The following financial statements set forth the fiscal status of the Iowa Medical Society as of December 31, 1964. Operations for 1964 resulted in an excess of expenses over income of $7,202.23. This is the fourth year in succession that the Society has experienced a deficit with a corresponding decrease in reserves and net worth.

IOWA MEDICAL SOCIETY

Balance Sheet—December 31, 1964

ASSETS

Current Assets:	
IMS Checking Accounts	$ 9,382.50
Cash on Hand	526.13
Government Bonds	5,000.00
Medicare	5,000.00
Notes Receivable (Baldridge-Beye)	1,250.00
Pension and Disability Insurance—Due from Employees	1,535.47
Total Current Assets	$ 22,694.10
Fixed Assets:	
Land	$ 77,500.00
Building (Depreciated Value)	17,275.85
WDM Building	3,526.21
Net Fixed Assets	$ 98,302.06
TOTAL ASSETS	$120,996.16

LIABILITIES AND NET WORTH

Liabilities:		
Accrued State Personal & Property Tax		$ 2,395.06
Baldridge-Beye Memorial Fund: Notes: 12-31-64		1,250.00
Total Liabilities		$ 3,645.06
Net Worth:		
Balance 1-1-64	$124,553.33	
Less: Net Expense 1964	7,202.23	
		117,351.10
TOTAL LIABILITIES AND NET WORTH		$120,996.16

IOWA MEDICAL SOCIETY
STATEMENT OF INCOME AND EXPENSES

For the Year Ended December 31, 1964

Income for the Year 1964:	
Dues—State Society	$193,772.50
Interest on Investments	2,239.57
Medicare	1,417.54
Miscellaneous	790.78
AMA Collection Commission	933.97
TOTAL INCOME	$199,154.36
Expenses for the Year 1964:	
Annual Session (Net)	$ 1,479.05
Council Expense	2,131.65
County Society Services	3,174.88
Dues and Subscriptions	1,372.15
General Administrative Expense	1,303.70
Insurance	2,036.05
JOURNAL (Net)	18,140.42
Legal Expense	3,944.35
Lights, Gas and Water	1,432.23
Office Furniture and Fixtures	
Office Stationery and Supplies	4,393.21
Pension and Disability Insurance	5,323.74
Postage	5,757.13
Repairs and Maintenance	360.39
Salaries	80,487.25
Service Contracts—Machines	674.00
Taxes:	
Personal and Property	2,400.00
Social Security Taxes	2,324.68
Unemployment—Federal	196.14
Unemployment—State	98.05
Use Tax	653.76
Telephone and Telegraph	6,852.59
Travel—Officer	11,952.41
Travel—Salaried Employees	12,452.78
Trustee Expense	3,012.74
Woman's Auxiliary	1,917.08
Committee Expense	32,486.16
TOTAL EXPENSE	$206,356.59
Net Expense for 1964	$ 7,202.23

BOARD OF TRUSTEES

A comprehensive report on activities of the Board of Trustees will be presented at the first session of the House of Delegates in April. It will include information on IMS building plans, relations with Blue Shield and the Iowa Medical Foundation, as well as on all general activities.

Delegates and alternates are urged to study carefully all of the reports incorporated in this HANDBOOK, and especially those of the secretary and the treasurer. As a part of its Supplemental Report, the Board of Trustees will discuss all of the fiscal affairs of the IMS.

S. P. LEINBACH, M.D., *Chairman*

JUDICIAL COUNCIL

At its organizational session following the IMS annual meeting in April, 1964, Drs. R. L. Wicks, Oscar Alden, James Bishop and C. N. Cooper were welcomed to Council membership. Dr. C. E. Radcliffe and Dr. K. E. Lister were reelected chairman and secretary, respectively. Then, in January, 1965, Dr. Radcliffe accepted appointment as IMS alternate delegate to the AMA, and to avoid a dual role, resigned as councilor and as chairman of the Judicial Council. His replacement as councilor is Dr. L. D. Caraway, of Monticello. Dr. Lister was thereupon chosen as the new chairman of the Council, and Dr. J. F. Paulson was elected secretary.

The Judicial Council held four regular sessions, at three-month intervals, to transact business that had been referred to it. Among its responsibilities are the approving of applicants for IMS membership, and approving applications from osteopathic physicians and surgeons whom the county medical societies and the MD/DO Liaison Committee have recommended as "individuals with whom it shall not be unethical for doctors of medicine to associate professionally." During the course of the year, 14 DO&S applicants were *disapproved,* on recommendation of the MD/DO Liaison Committee. All of them subsequently appealed their disapprovals, and hearings were conducted, but thus far none of the 14 have been granted "approved" status.

The other activities of the Judicial Council have included interpretations of medical ethics and opinions on medicolegal questions. With the invaluable advice of Mr. John H. Raife, the IMS legal counsel, it has dealt with all such problems satisfactorily, though probably not always conclusively. A great many hours of the councilors' time, both as individuals and as a group, have been spent on questions relating to physician ownership or control of pharmacies. In accord with the actions of the AMA House of Delegates and the AMA Judicial Council, it is the position of the IMS Judicial Council that it is ethical for a physician to own a pharmacy, if there is no exploitation of the patient, and that a physician may rent space to a pharmacist if the rental is not a percentage of gross or net.

The Judicial Council has held two special sessions during the year. One of these was entirely devoted to a hearing of charges preferred by the IMS Grievance Committee against two members of the Society concerning abuses of the Old Age Assistance program and unjustified billings to the Department of Social Welfare. The councilors questioned the physicians, listened to them and their attorneys, and then agreed to censure the doctors and to place them on probationary status for a period of one year, with the proviso that they continue to treat their OAA patients. The Council asked the Department of Social Welfare to let them remain in the OAA program, but the Department has removed them from the list of participating physicians for an indefinite period.

On another occasion, in an informal hearing, the

Judicial Council heard charges brought against three physicians by Iowa Medical Service, for alleged irregularities in billings. A satisfactory solution to that problem was obtained very readily.

Another problem brought to the Council concerned details of the organization of a cardiopulmonary laboratory at Mercy Hospital, Des Moines. Again, with Mr. Raife's assistance, this problem was readily settled. The people involved were advised to conform in detail to the regulations in House File 21 so that the laboratory might be ethically operated.

This has been an active year for the Judicial Council, but the councilors feel that their work has been highly interesting and quite valuable to the Society. Physicians are invited to avail themselves of the consultation and advice of the Council as frequently as may be necessary.

KENNETH E. LISTER, M.D., *Chairman*

Reports of Standing Committees

COMMITTEE ON LEGISLATION

NATIONAL LEGISLATION

King-Anderson Bill: On Monday, February 8, 1965, the American Medical Association presented its views on HR 1, the King-Anderson Bill, before the House Ways and Means Committee in closed-door executive session. The AMA reaffirmed its opposition to the King-Anderson Medicare tax bill as a "dangerous venture by the federal government in the field of health care."

AMA representatives pointed out that the proposed program would be unpredictably expensive; would impose an unfair burden on the nation's wage earners and their employers to finance health care benefits for millions of older Americans who are self-supporting and do not need government benefits; would establish federal regulation and control which would not be compatible with the practice of high-quality medicine; and would offer inadequate benefits to the aged. The AMA witnesses testified strongly in favor of the Herlong-Curtis Bill, HR 3727, pointing out that the Bill is designed to provide the elderly who need financial assistance with a wide range of hospital and medical benefits which would far exceed the limited program contemplated by the King-Anderson Bill.

The House Ways and Means Committee concluded its executive hearings on or about February 10, and it is expected that the Committee will report out a bill by the middle of March, 1965. Organized medicine is faced again with an extremely difficult legislative battle. The Committee will continue to serve, as one arm of organized medicine in Iowa, to relate to Iowa Congressmen the position of medicine on financing health care for the aged.

ANNUAL WASHINGTON CONFERENCE

Representatives from the Iowa Medical Society will meet with the Iowa Congressional delegation in Washington, D. C., on March 1 and 2, 1965. A report of that meeting will be included as a part of the Committee's supplemental report for presentation at the April meeting of the House of Delegates.

STATE LEGISLATION

The 61st Iowa General Assembly is now in session. At the time this report is written, several health-related matters are before the members of the Legislature. The items under consideration include: (1) an adequate appropriation for MAA, with retention of the fiscal agent arrangement and other important provisions of the Iowa MAA law; (2) a change in the composition and functions of the State Board of Health; (3) a bill to require Blue Shield to pay for the services of a podiatrist; (4) a bill to require any student or teacher in a public school to wear protective glasses when participating in certain classes; (5) free choice of physician under Workmen's Compensation; (6) battered child legislation; (7) local property levy for public health purposes; (8) mandatory PKU testing; (9) a change in the composition of the Hill-Burton Advisory Council; (10) licensing of physical therapists; (11) a premium tax on Blue Cross-Blue Shield; and other items.

The Committee on Legislation maintains constant liaison with the members of the Iowa General Assembly in an attempt to see that only legislation in the best interest of the public is enacted into law.

The Committee once again wishes to express its appreciation to the county legislative contact men, who continue to perform a most valuable and indeed indispensable function. Each county legislative contact man has responded immediately when called upon for his assistance. This line of communication has been utilized time and again to aid the Committee in carrying out the duties with which it has been charged. This is especially important during sessions of the Iowa General Assembly, since county legislative contact men serve as most important personal contacts with members of the Iowa General Assembly.

J. H. KELLEY, M.D., *Chairman*

NECROLOGY COMMITTEE

The following members of the Iowa Medical Society died during 1964:

	Age
Albert E. Acher, Fort Dodge	86
Leon A. Baldwin, Riverton	85
Carl L. Bradley, Newhall	80
John D. Cantwell, Wilmette, Illinois	87
Walter S. Chester, Albia	73
Joseph E. Christopherson, Mason City	45
Ernest D. Erickson, Sioux City	44
William W. Hansell, Des Moines	72
Frank T. Hartman, Waterloo	93
William P. Hayes, Cedar Rapids	51
Elias B. Howell, Ottumwa	79
David R. Ingraham, Sewal	83
Hugo V. Kahler, Reinbeck	86
Harry H. Lamb, Davenport	68
John F. Loeck, Independence	66
Charles F. Lowry, Council Bluffs	61
Guy E. McFarland, Jr., Ames	56
Merle J. McGrane, New Hampton	76
Truman M. Mast, Washington	59
Arthur M. Merritt, Des Moines	83
Charles A. Merulla, Madison, Wisconsin	40
Joseph J. Nemec, Cedar Rapids	53
Herman D. Oggel, Waterloo	90
Martin I. Olsen, Des Moines	86
John D. Paul, Anamosa	73
Herbert B. Paulsen, Harris	59
Harry E. Pfeiffer, Riviera Beach, Florida	85
Arthur G. Plankers, Dubuque	75
Edward R. Posner, Sr., Des Moines	86

Edwin A. Reedholm, Grundy Center 48
John Russell, Santa Barbara, California 83
Theodore Scharle, Dubuque 64
Richard C. Sherman, Los Angeles, California 81
Leslie L. Smead, Newton 82
Harold A. Spilman, Ottumwa 76
Fred L. Steffey, Keokuk 52
Alice C. Stinson, Estherville 91
Claude B. Tice, Mason City 83
Edmund J. Tierney, Sioux City 61
George H. Watters, Des Moines 66
Ralph L. Whitley, Osage 93

NURSING EDUCATION AND SERVICE COMMITTEE

This Committee continues to cooperate with the Iowa League for Nursing and the Iowa Nurses Association in areas of mutual interest involving duties and classification of the whole spectrum of the nursing care of patients.

While there has been no formal meeting of this Committee, efforts have been made to keep members informed on newer concepts of nursing services.

Special interest has been exhibited in the area of the Associate Degree Program in Iowa, the first class of which graduated in January, 1965, from the Fort Dodge Community College.

O. N. GLESNE, M.D., *Chairman*

MEDICO-LEGAL COMMITTEE

No Medico-Legal Committee meetings were held the past year, and no business was referred to the Committee.

VAN C. ROBINSON, M.D., *Chairman*

ARTICLES OF INCORPORATION AND BY-LAWS

This Committee has nothing to report at this time; however, if proposed amendments are brought to its attention prior to the Annual Meeting, they will be properly developed for presentation to the House of Delegates.

G. H. SCANLON, M.D., *Chairman*

COMMITTEE ON MEDICAL SERVICE

The utilization study which has been in the planning stage for several years is now about to become a reality. In 1964 the Medical Service Committee was active on this project through the Joint Committee consisting of representatives of the Iowa Medical Society and the Iowa Hospital Association.

This Medical-Hospital Statistical Committee (formerly Utilization Committee) has had the approval by the Executive Council of the Iowa Medical Society and The Board of Trustees of the Iowa Hospital Association to proceed with a pilot study. This study will be for a six-month period, and will be handled by selected hospitals throughout the state. The information collected by each participating hospital will be reviewed at the end of the six-month period by the Medical-Hospital Statistical Committee, for purposes of evaluation and any revisions that may be required.

Any information leaving the hospital will be kept confidential by the coding procedures of the Royal-McBee Keysort System. This is a very simple, inexpensive method of assembling large quantities of information, and it should prove of great assistance to the Iowa Medical Society and to the Iowa Hospital Association.

When a summary of the Pilot Study is available, it will be presented to the Executive Council of the Iowa Medical Society and to the Board of Trustees of the Iowa Hospital Association for appraisal and further direction.

The Iowa Medical Society continues to serve as fiscal agent for the Department of Defense in administering the Medicare Program, and has paid to Iowa physicians approximately $280,000.00 during the past 12 months.

G. G. YOUNG, M.D., *Chairman*

COMMITTEE ON STATE DEPARTMENTS

Created by action of the IMS House of Delegates in 1963, the Committee on State Departments is rapidly moving from infancy to maturity, to take its place as an important unit of the Society. The Committee has met twice in recent months—once in August and once in January.

The Committee consists of the chairmen of six subcommittees. Each of these subcommittees has an interest in the programs and activities of a particular state agency, as well as a desire to be of assistance to the agency. The Committee's essential function is that of serving as a liaison body and communications channel between these several state agencies and the Iowa Medical Society. The Committee's sphere of interest can be grasped by noting the areas in which the subcommittees are at work: Maternal and Child Health, Nervous and Mental Diseases, Aging and Chronic Illness, Rehabilitation, Safe Transportation, and Public Assistance. Their specific activities may be discussed in their individual reports.

The Committee's two meetings this year have been somewhat organizational in nature. This was particularly true at the first meeting, at which the subcommittee chairmen outlined programs underway in their areas and indicated the state agencies and state personnel with whom they were likely to be in contact.

Dr. Arthur P. Long, acting commissioner of health, has been present at both meetings of the Committee. On each occasion he has been given the opportunity to explain future aspects of the public health program in Iowa as he sees it. This discussion has covered a wide spectrum of subject areas, e.g., immunization, nursing homes, tumor registry, educational programs and services for physicians and the public, automotive safety, water pollution, rabies control, etc.

A program of public education in the area of diabetes detection has been put into motion by the Department of Health, with the Society adding its identity upon the recommendation of the Committee. This program will involve the distribution of small informational folders through beauty salons and barber shops in the state. These leaflets have been made available to the Department of Health at no cost, and will carry the name of the Iowa Medical Society as a co-sponsor.

The Committee has recommended that the Society continue as an approving agency in the forthcoming printing of the third edition of the SIMPLIFIED DIET MANUAL, a widely-used publication of the Nutrition Service of the Iowa State Department of Health.

The Committee should be able to function even

more effectively in the days ahead because of a good "freshman" year.

A. H. DOWNING, M.D., *Chairman*

SUBCOMMITTEE ON MATERNAL AND CHILD HEALTH

Although the Subcommittee has not held a formal meeting to date this year, several matters have been called to the attention of the chairman.

Legislation requiring any student or teacher in a public school to wear protective glasses when performing certain tasks has been introduced before the 1965 Iowa General Assembly. This is a matter which has been of particular interest to the Subcommittee. The following statement pertaining to this subject was approved by the 1964 House of Delegates:

"The Subcommittee on Maternal and Child Health recommends that the Iowa Medical Society encourage and support voluntary programs sponsored at the local level by the medical profession and responsible school authorities to require pupils and teachers to wear protective eye devices when participating in certain vocational and industrial arts classes as well as in chemistry and physics laboratories. It is further recommended that the Iowa Medical Society support in principle the enactment of proper legislation formulated to accomplish the above-stated purposes through a properly drawn and properly administered statute which could result in a constructive and worthwhile law."

The proposed law is now under examination. Determination will be made as to whether or not it meets the requirements of the preceding statement.

A bill commonly referred to as "battered child legislation" has been considered by various representatives of the Society, including the chairman. This legislation would require physicians and others to report to local authorities instances where children have been physically abused. Support in principle has been given to this legislation by various segments of the medical profession.

Another legislative possibility, not introduced at this time, is a bill to make mandatory the administering of PKU tests to all newborn. Specifics of this compulsory testing program are as yet unknown. It is felt that a program of education would be more desirable at this time than state legislation making the testing mandatory.

The Board of Trustees, upon the recommendation of the chairman of the Subcommittee, accepted an invitation for the IMS to become one of the sponsoring organizations on the state level for the YOUTHPOWER program. This program attempts to educate young people with regard to good nutrition and desirable eating habits. The chairman of the Subcommittee will serve as a liaison representative between the IMS and other sponsoring organizations.

The chairman has shared in the several meetings of the newly-functioning Committee on State Departments, and has found it an effective means of acquiring information relative to programs involving various of the state agencies.

JACK SPEVAK, M.D., *Chairman*

SUBCOMMITTEE ON PUBLIC ASSISTANCE

The Subcommittee on Public Assistance has considered a variety of subjects this year.

Resolution No. 21 from the Dallas-Guthrie County Medical Society, pertaining to the compensation of dispensing physicians under the OAA program, was studied by the Subcommittee. Material previously submitted to the Board of Social Welfare as evidence that dispensing physicians are operating at a loss by dispensing to vendor payment beneficiaries was explored. Heretofore, the Board has not considered this data to be sufficiently conclusive. On December 17, 1964, the Subcommittee presented to the Board of Social Welfare a new study from the Dallas-Guthrie County Medical Society. This study proposed the cost of the drug plus 30 per cent plus 50 cents for handling as an equitable pricing formula for a dispensing physician. No response has been received to date from the Board of Social Welfare concerning this proposal.

Three cases of alleged irregularity in the vendor payment program were referred to the Subcommittee through a mechanism established during the last annual meeting of the IMS. These cases were reviewed and submitted to the Grievance Committee and, subsequently, to the Judicial Council. The ultimate findings of the Judicial Council were transmitted to the State Board of Social Welfare. Out of this experience has grown a strong desire by the Subcommittee to underscore the need for diligence by the County Medical Review Committees. Careful review of charges at the local level is vital. The Subcommittee feels strongly that any review of physicians' mode of practice and charges must be conducted within the structure of the IMS and not be left, by default, to lay personnel.

Another important item before the Subcommittee this year has involved the use of Vitamin B-12 in the treatment of welfare patients. While the Subcommittee feels the Welfare Department should not take any action which might appear to constitute dictation, it conceded that every effort should be made to ferret out physicians who are obviously abusing the use of B-12. Elmer Smith, M.D., medical director of the State Department of Social Welfare, made a formal review of the use of B-12 during the year, and a memorandum containing Dr. Smith's findings was circulated over the state. This communication was reviewed by the Subcommittee, and a question about its being construed as an interference with the individual physician's mode of practice was clarified.

The Welfare Committee of the Polk County Medical Society requested IMS assistance in obtaining an interpretation of the vendor payment programs, specifically as to provisions for welfare payment of medical services to established health facilities, such as the Des Moines Health Center and Broadlawns Hospital Out-Patient Department. It was noted that neither state nor federal laws limit the type or kind of health services for which welfare payments may be made. Further, it was pointed out that patients visiting these facilities for treatment are told they may see private physicians and receive welfare benefits. Experience shows, however, that this type of patient apparently prefers a community facility of the type represented by Broadlawns and the Des Moines Health Center. The Subcommittee brought this matter to the attention of the Board of Social Welfare and was assured the Board would outline its position for the Polk County Medical Society.

In connection with the 61st General Assembly, the Subcommittee presented certain legislative proposals

to a special IMS Coordinating Committee on December 7, 1964. The Committee gave its support to a recommendation that an adequate state appropriation be made to finance a health program for Aid to the Disabled recipients. It was the consensus of the special committee that any fee negotiations in this area should be on the basis of usual and customary fee, with a percentage reduction to be considered, if necessary.

Possible legislative changes in the OAA program were brought to the attention of this special coordinating group by the Subcommittee, but no action was taken. These included abandonment of restrictions regarding citizenship, ownership or transfer of property, and income or support from responsible relatives. Also with regard to MAA, it was pointed out that removal of the $50 deductible was under consideration by the Board of Social Welfare.

The Subcommittee, through the chairman, has participated in meetings of the IMS Committee on State Departments. These meetings have afforded him good opportunities for exchange of information with units of the Society working with various agencies of state government. The chairman has attempted to make it known to the other members of the Committee on State Departments that the purpose of the Subcommittee on Public Assistance is one of communicating to and interpreting for the Board of Social Welfare the policies of the IMS on matters dealing with various forms of public assistance.

A detailed report of the MAA Liaison Committee, of which W. J. Morrissey, M.D., is chairman, is presented elsewhere in this HANDBOOK. That Committee is an important adjunct of the Subcommittee on Public Assistance.

The chairman offers personal thanks to the members of the Subcommittee for the time, effort and personal sacrifice they have made in contributing to the work at hand. We are likewise indebted to the previous Committee and other IMS members who have served in past years.

L. J. O'BRIEN, M.D., *Chairman*

MAA LIAISON COMMITTEE

During the past year this Committee has functioned in conjunction with the Subcommittee on Public Assistance, and on two occasions has held joint meetings with that Subcommittee. As chairman of the MAA Liaison Committee and the IMS delegate to the State MAA Advisory Council, I have attended several meetings of the MAA Advisory Council which included meetings with the State Board of Social Welfare.

As you are all aware, there has been much interest shown by the physicians of Iowa in the MAA program. This we believe is reflected in part by the number of persons who have applied for and have been certified as eligible for MAA. The MAA Liaison Committee has received dozens of inquiries from individuals seeking more detailed information regarding the eligibility requirements for Iowa MAA and the services it provides, once a person has been certified as eligible. These inquiries increased markedly at the time of the informational campaign conducted by the American Medical Association, the Iowa Medical Society and county medical societies. The Committee has reported on two occasions during the past year to the IMS Executive Council, and has presented recommendations regarding the MAA program. The actions of the Executive Council have been reported to the members of the Iowa Medical Society through various mechanisms.

Since the Iowa General Assembly is now in session, the policy of the Iowa Medical Society regarding MAA is being communicated to the members of the Iowa General Assembly through various means, under the guidance of the Board of Trustees and the Committee on Legislation.

As a representative of the Iowa Medical Society and as chairman of the MAA Liaison Committee, I attended an AMA-sponsored Kerr-Mills conference in Chicago early in January, 1965. Each state medical society was represented, and the representatives were asked to report on the status of their Kerr-Mills programs, and to present changes which they would recommend in order to make the programs more effective. It was apparent from the conference that Iowa has one of the better MAA programs, and that every effort should be expended to see that this program is continued without radical changes.

The MAA Liaison Committee will continue to function as the Iowa Medical Society's contact with the State MAA Advisory Council and Board of Social Welfare in matters relating to the Iowa Kerr-Mills program (Medical Assistance to the Aged).

W. J. MORRISSEY, M.D., *Chairman*

SUBCOMMITTEE ON AGING AND CHRONIC ILLNESS

The Subcommittee has had no special problems or responsibilities this year, and therefore there have been no formal meetings of the entire Subcommittee. Various members of the Subcommittee, however, have attended and participated in meetings throughout the state and region, where problems of aging and chronic illness were being considered. The chairman of the Subcommittee has met twice with the acting commissioner of health for the state of Iowa and has discussed mutual problems with other subcommittee chairmen comprising the Committee on State Departments.

Dr. E. E. Linder, of Ogden, a member of the Subcommittee, participated in the AMA Conference on Aging and Long-Term Care, in Chicago on February 4 and 5. The Iowa Medical Society cooperated in presenting this Conference, and the Subcommittee assisted by developing a list of persons from Iowa who would profit from attending such a meeting. These individuals were invited by the AMA.

The huge scope of the problem of aging and chronic illness in the United States today has been well pointed up by the appointment of a presidential commission to establish centers for studying and treating such illnesses throughout the country. This Subcommittee anticipates that in the very near future it will have many problems to solve for aging and chronically-ill Iowans. We hope we are prepared for them.

G. E. MONTGOMERY, M.D., *Chairman*

SUBCOMMITTEE ON REHABILITATION

The chairman of the Subcommittee on Rehabilitation has no report to submit.

CARROLL B. LARSON, M.D., *Chairman*

COMMITTEE ON SAFE TRANSPORTATION

The IMS Committee on Safe Transportation continues to maintain close liaison with the Department

LOMOTIL *Pharmacologic Activity*

The significant pharmacologic actions of Lomotil are summarized as follows:

Evidence indicates that Lomotil acts directly on the intestinal musculature to inhibit excess peristalsis.

Lomotil is not known to inhibit nonpropulsive intestinal movements.

Roentgenograms demonstrate that this activity occurs within two hours after oral administration and persists for at least six hours.

Comparative studies in the rat show Lomotil to be more effective in inhibiting fecal excretion than either codeine or morphine.

Analgesic, anticholinergic, mydriatic and gastric secretory effects have not been significant.

Reduction of propulsive motility with Lomotil relieves spasm and cramping, allows physiologic absorption of fluid and reduces frequency of evacuations to provide prompt, symptomatic control of virtually all diarrheas.

LOMOTIL®

Each tablet and each 5 cc. of liquid contains:

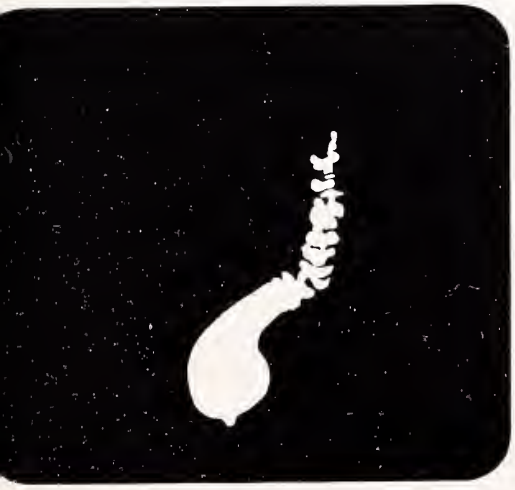
diphenoxylate hydrochloride ..... 2.5 mg.
(Warning: May be habit forming)
atropine sulfate ..... 0.025 mg.

tablets • liquid

slows propulsion

relieves distress

stops diarrhea



Precautions: Lomotil is an exempt narcotic preparation of very low addictive potential: more than three million prescriptions have now been written for Lomotil. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect—Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:

3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults:

20 mg. (2 tsp. 5 times daily or
2 tablets 4 times daily)

**Based on 4 cc. per teaspoonful.*

Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

of Public Safety and the Iowa Highway Patrol on all matters pertaining to traffic safety and reducing the number of injuries and deaths resulting from vehicle accidents.

At a meeting between the Committee and representatives of the Department of Public Safety and Highway Patrol, there was considerable discussion of problems relating to the medical aspects of driver limitation. It was pointed out that recommendations of the AMA concerning this subject are actually being utilized in Iowa at the present time, and that problems are not insurmountable under the present system. However, this matter will continue to be explored at future conferences.

It is recommended by the AMA that a medical examination for "driver limitation" be conducted at least under the following conditions: (1) when a licensed applicant displays an obviously impaired physical function; (2) when a driver has been involved in multiple accidents within a short calendar period; (3) when a driver must be placed in the "assigned risk" pool for insurance underwriters because of refusal by various commercial carriers to assume the risk; and (4) when a driver voluntarily suggests that he "blacked out," or that medical problems contributed to an accident.

The Committee has concluded that drinking appears to be one of the major contributory factors to traffic accidents, and on its recommendation, the IMS Executive Council approved a motion to endorse the present position of the AMA regarding the relationship between blood alcohol and intoxication. The policy statement adopted by the AMA and endorsed by the IMS is as follows: "Blood alcohol of 0.10 per cent (100 mg. per cent) be accepted as *prima facie* evidence of alcoholic intoxication, recognizing that many individuals are under the influence in the 0.05 per cent (50 mg. per cent) to 0.10 per cent (100 mg. per cent) range." Information regarding this action by the Executive Council was transmitted to the Commissioner of Public Safety.

Following the completion of the two-year Iowa-Cornell University Automotive Crash Injury Research Data Collection Program, on January 31, 1964, representatives of Cornell University met with the Committee and presented a preliminary progress report on the results of the survey. They said that cooperation of all groups involved—the IMS, the State Department of Health, the Iowa Hospital Association and the Iowa Highway Patrol—was excellent, and completed medical reports attained 90 per cent of the total required. A complete analysis of the survey is to be provided by ACIR as soon as it is completed.

Your Committee chairman represented the Society at a National Conference on Medical Aspects of Driver Safety and Driver Licensing which was held in Chicago, November 16-18, 1964. A detailed report was provided to Committee members and other appropriate Society officials.

As a public service, the Society continues to secure films on automotive safety for use by schools throughout the state.

Along with the Legislative Committee, the Committee on Safe Transportation is keeping well apprised of various bills being introduced to the 61st Iowa General Assembly that would have a direct or indirect influence on the medical aspects of highway safety.

ARTHUR H. DOWNING, M.D., *Chairman*

SUBCOMMITTEE ON NERVOUS AND MENTAL DISEASES

Activities of the Subcommittee on Nervous and Mental Diseases have covered a wide spectrum during the past several months. Several proposals of the Subcommittee are still pending. Three meetings of the Subcommittee have been held: one in July, one in December and one in January.

The Subcommittee has given particular emphasis in its deliberations to finding effective ways of alerting Iowa physicians to the need for becoming informed at the local level on matters relating to mental health. With this objective in mind, the Subcommittee was successful in arranging a speaking appearance for the chairman at the IMS Fall Conference of County Society Officers. A short address on the topic, "The Prevention of Socialized Medicine by Local County Society Action in the Field of Mental Health" was presented to those attending this conference.

As another way of achieving the previously mentioned objective, the Subcommittee is contemplating the distribution of a letter to county medical societies requesting and encouraging them to re-examine their relationships with existing mental health centers, in keeping with the standards set forth by the state Society. This communication will, among other things, emphasize the need for county societies to be cognizant of the IMS standards and to carry out their responsibilities as co-sponsors of particular mental health centers.

The Subcommittee has devoted considerable time to examining the present relationship between the following: 1) the IMS Standards on Mental Health Clinics, as adopted by the Executive Council in 1960; 2) present practices in the 16 Iowa mental health centers, particularly insofar as outpatient care, patient eligibility and fees are concerned: and 3) the federal requirements for mental health centers.

The Subcommittee, at its initial meeting, reviewed, reaffirmed and took steps to transmit Resolution 34, as approved by the 1964 IMS House of Delegates, to the State Department of Health. This resolution advocated a cautious use of the available governmental funds, based on careful planning, and emphasized that funds should be used within local communities rather than be expended on any new or existing state-controlled facilities.

The Subcommittee has kept itself apprised of the progress of the comprehensive mental health planning project underway in the state. This planning activity is under the direction of the Mental Health Authority. Dr. Paul Huston, director of the MHA, has met twice with the Subcommittee to report on the project, and it is scheduled for completion by July 1, 1965. The Subcommittee has gone on record as favoring the continuance of the work of the MHA in the area of mental health planning, and as considering the MHA to be the ongoing planning organization in this field.

In the area of legislation, the Subcommittee recommended to the Executive Council that the IMS give its support, in principle, to an appropriations request to be submitted to the 61st General Assembly by the Board of Control to permit the construction of a security hospital separate from any existing penal institution in the state. This recommendation was approved by the Executive Council.

Another legislative recommendation made by the Subcommittee involved support of a proposal to desig-

nate the Mental Health Authority as the state agency in Iowa through which the U. S. Public Health Service can channel funds and other benefits, as provided in the National Mental Health Act passed by Congress in 1946. This recommendation was finalized following the January meeting of the Executive Council, and thus was transmitted to the Committee on Legislation without the official endorsement of the Society.

Members of the Subcommittee have been and are active on various other committees functioning in the state in the area of mental health. The chairman and one other member serve on the Governor's new Advisory Council on Mental Health.

The Subcommittee has also been well represented at various of the recent conferences and congresses, including the National Mental Health Congress sponsored by the AMA and held in Chicago during November. The Subcommittee will be represented at the 11th Annual Conference of Mental Health Representatives in Chicago during March.

At two meetings, the Subcommittee explored the possibility and desirability of having the IMS make an evaluation of the work being done at the state mental institutions. The Board of Trustees, responding to the Subcommittee's expressed interest in this project, has requested a definitive plan.

The matter of alcoholism in the state has been considered by the Subcommittee, and one member, who serves on the State Commission on Alcoholism, has outlined the state's needs in this area. These needs include halfway houses, a state farm for alcoholics, and two hospitals where short term care on a voluntary and commitment basis would be available. The Subcommittee suggested to the IMS Program Committee that a speaker on the subject of alcoholism be considered for a near-future Annual Meeting.

The work of the IMS Woman's Auxiliary in the area of mental health has been noted by the Subcommittee and deserves a word of commendation.

The chairman, in his first year in this capacity, is grateful to the members of the Subcommittee for their sincere interest in the tasks at hand, and for their good attendance at the several meetings.

T. C. PIEKENBROCK, M.D., *Chairman*

GRIEVANCE COMMITTEE

During the last year the Grievance Committee has considered some 20 cases. However, the majority of the Committee's time was spent on four cases, three of which involved physicians and the Department of Social Welfare. Except for those cases, the work of the Committee has continued to decrease, as was indicated in last year's report. Of the four specific cases, one involved the operation of pharmacies, and the Judicial Council considered this subject without recommendation from the Grievance Committee. Of the three cases involving physicians and the Department of Social Welfare, one case was resolved by the Grievance Committee and two cases were referred to the Judicial Council for disciplinary action. Considerable investigative work was done on each of these referrals, and it was only after a great deal of deliberation that recommendations were made by the Committee.

Disciplinary action was taken by the Society in each of the cases. However, it is the feeling of all members of the Grievance Committee that over and above the question of policing our own members there still remains a greater question, and that is the administration or attitude of the Department of Social Welfare. It is recommended by the Grievance Committee that the Society intensify its efforts to obtain clear-cut policies and attitudes on the part of the Department of Social Welfare so as to make it unnecessary for us to take disciplinary action against our own members because of mutual deficiencies on the part of both the physicians and the Department.

As has been customary in recent years, the members of this Committee have given of their time wholeheartedly; the attendance has been excellent at the meetings; and without the cooperation of every member, we would have been unable to do our work.

HERBERT C. MERILLAT, M.D., *Chairman*

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Areawide health-facilities planning has been a subject of major concern to the Committee on Medical Education and Hospitals. At a meeting of the Committee, this subject was thoroughly discussed. It has since been determined that Iowa law permits this state to participate in establishing and financing an areawide health-facilities planning commission, as authorized by the federal Hill-Burton Law, and that it has been recommended that, in Iowa, commissions be established on a local rather than on a statewide basis. It has also been ascertained that a committee of the Greater Des Moines Chamber of Commerce will be charged with the responsibility of evaluating health facilities in the Des Moines area, and it is possible this may be the first commission set up as a part of the overall federal program.

This matter has been called to the attention of the IMS Executive Council and Legislative Committee, with the recommendation that appropriate steps be taken to assure adequate physician representation on an areawide health facilities planning commission in Iowa, if and when one is officially appointed. The Committee also strongly urges all county medical societies to be alert to this situation, and to make certain that the medical profession is adequately represented on any areawide planning councils or committees which may, in the future, be established in other areas of the state.

As previously reported to the membership through the IMS NEWS BULLETIN, the AMA House of Delegates, in November, 1964, reiterated its vigorous opposition to any attempts to make areawide planning compulsory, and continued to support voluntary areawide health-facilities planning programs.

Dr. Elmer Smith, a member of the Committee on Medical Education and Hospitals, and several officers of the Society, represented the IMS at the First National Conference on Areawide Health Facilities Planning, which was sponsored by the AMA immediately preceding the 1964 AMA Clinical Session in November. A report on the Conference was provided to each member of the Committee, as well as to all members of the Executive Council.

The Committee has also met with Robert C. Hardin, M.D., dean of the SUI College of Medicine, and Robert Carter, M.D., assistant dean, to discuss present and future postgraduate-education programs sponsored by the College of Medicine. At the time of the meeting, the College of Medicine was in the process of establishing a closed-television network for continuing medical education programs with the Veterans Administration,

with Broadlawns, Mercy and Methodist Hospitals in Des Moines, and with St. Luke's and Mercy Hospitals in Cedar Rapids. If the project is successful, it is anticipated that other areas throughout the state will be included in the television network.

The Committee will cooperate with the College of Medicine in a survey of all Iowa physicians in an effort to determine the types of postgraduate programs which would be of greatest interest and value to them.

As stated by Dean Hardin, Iowa medicine is fortunate in having such excellent "town and gown" relationships, both in Iowa City and throughout the state.

The Committee has been informed that the jointly-approved evaluation and enrollment program for osteopaths is operating very effectively, and that to date, well over 100 osteopathic physicians and surgeons have been placed on the list of "individuals with whom it shall not be considered unethical for doctors of medicine to associate professionally." These "approved" osteopaths receive invitations to attend all postgraduate courses conducted by the SUI College of Medicine.

Interest in medical-careers projects has been maintained, and the Society continues to provide appropriate films and informational literature to "Future Doctors Clubs" and to schools throughout the state, in an effort to encourage students to enter the profession of medicine.

R. N. LARIMER, M.D., *Chairman*

COMMITTEE ON PUBLIC RELATIONS

The IMS Public Relations Committee has been involved in coordinating and implementing two major public information programs on the subject of health care for the aged.

From October 1 through October 25, 1964, a series of ads developed and paid for by the AMA, were placed in weekly and daily newspapers throughout the state. At least one newspaper in each Iowa county was utilized, and in practically all instances the county medical society was identified as the sponsor of the ad. Newspapers in which the 133 ads were placed, represented a total circulation of approximately 2,148.000. To supplement this project, several county societies requested additional ads for follow-up use, and numerous radio spot announcements were also distributed. In addition, the IMS distributed approximately 3,000 posters and 85,000 informational pamphlets concerning proposed King-Anderson legislation and existing Kerr-Mills programs. A 30-minute television film featuring Dr. Edward Annis, past-president of the AMA, was also utilized in conjunction with this educational program, and was shown over stations WMT-TV, Cedar Rapids; KGLO-TV, Mason City; WOW-TV, Omaha; and WHBF-TV, Rock Island.

The Society is presently engaged in developing and implementing a statewide public information campaign on the ELDERCARE program (HR 3727), and the AMA will share in the cost of this project. Beginning February 28, full-page ads developed by the IMS will be placed in the DES MOINES REGISTER on three, and possibly four, successive Sundays, and on request, each county medical society will be provided mats of the ads to be sponsored by the county society in local dailies and weeklies. It is hoped that an 80 per cent newspaper coverage of the state can be attained. The basic objective of this campaign is to motivate individuals to contact their congressmen in Washington, expressing support of the ELDERCARE program, and opposition to King-Anderson legislation and all similar measures.

To supplement the current project, informational pamphlets on the ELDERCARE program will be sent to all members of the IMS for distribution through their offices, and prepared speeches and other pertinent materials will also be made available.

Contact has also been made with representatives of allied health organizations, and they will utilize materials available through the Society in implementing various programs to elicit public support of the ELDERCARE program.

Constant liaison is maintained with all communications media to provide information on various Society activities and policies. For example, a special news story on advances in medicine was released to the news media last fall in recognition of Community Health Week, October 18-24, and wide coverage was received throughout the state on the 1964 Annual Meeting. In addition, reprints of the "In the Public Interest" section of the IMS JOURNAL are distributed each month to all communications media, as well as to all Iowa legislators.

As a result of a recommendation from the Public Relations Committee, a statewide Conference on Medical Quackery was sponsored by the Iowa Interprofessional Association in Des Moines on May 27, 1964. The program was well reported by representatives of the press, radio and television. After the conference, a detailed program summary was prepared and distributed by IMS staff to the news media for follow-up stories. Copies of the summary were also sent to all conference registrants.

On August 26, 1964, the Public Relations Committee met with the IMS Board of Trustees, the President of the Woman's Auxiliary, representatives of AMA and AMPAC, and others to discuss immediate projects, as well as plans for a long-range public relations program. The Committee will continue to pursue suggestions and recommendations which were made at this conference. In accordance with one recommendation made at the meeting, the Public Relations Committee and the Committee on Health Education contacted each county medical society president to encourage the establishment of a speakers bureau at the local level. To date, 12 counties have responded. It is the Committee's belief that despite the effectiveness of the mass media, the speakers bureau reaches the public on a more personal basis.

The Seventh Hawkeye Science Fair will be held at Veterans Memorial Auditorium in Des Moines, April 9-10, 1965. This annual event, sponsored by the Iowa Medical Society-Iowa Medical Foundation, Drake University, and DES MOINES REGISTER AND TRIBUNE, gains in prestige and in participation each year. In 1964, approximately 500 exhibits were displayed by junior and senior high school students representing 107 schools. Over $3,000 in scholarships and other awards contributed by numerous professional and business organizations were presented to outstanding exhibitors. In addition to sponsoring the HSF, the Society contributed an award for presentation to a top exhibitor at the Eastern Iowa Science Fair, in Cedar Rapids.

Representatives of the Public Relations Committee attended the AMA P/R Institute in Chicago, August 20-21, at which time various projects implemented throughout the country in the public interest were reviewed.

The Committee is cognizant of the many excellent

public service projects carried out by county medical societies at the local level, and it will continue to utilize all means available to enhance the image of the medical profession.

JOHN G. THOMSEN, M.D., *Chairman*

COMMITTEE ON INTERPROFESSIONAL ACTIVITIES

As a result of a meeting between the Interprofessional Activities Committee of the IMS, and a similar committee of the Iowa Pharmaceutical Association, plans are now being developed for a statewide Congress on Medicine and Pharmacy, to be co-sponsored during the coming year by the IMS and IPhA.

At the joint meeting, the subject of pharmacy ownership was also discussed. For informational purposes, pharmacy representatives said that in an effort to police its own ranks, the IPhA plans to request the Board of Pharmacy to ask pharmacists, when necessary, for copies of lessee-lessor agreements between physicians and pharmacists in order to ascertain whether or not the agreements conform to proper ethical standards. In this connection, there seemed to be general acceptance of a suggestion from Medical Society representatives that, rather than relinquish its judicial authority directly to the Board of Pharmacy, perhaps the IPhA would first want to make every attempt on its own to obtain information regarding lessee-lessor agreements from pharmacists, and turn to the Pharmacy Board only when such efforts have failed. IMS representatives also pointed out that whenever official complaints are lodged by the IPhA against physicians, appropriate steps will be taken to investigate and act on the charges.

Liaison is maintained between the Committee and the Iowa Interprofessional Association, which consists of the IMS, the Iowa Dental Association, the Iowa Hospital Association, the Iowa Veterinary Medical Association, the Iowa Pharmaceutical Association, and the Iowa Nurses Association. Dr. John G. Thomsen, chairman of the IMS Public Relations Committee, is president-elect of the IIA; Dr. Oscar Alden, a member of the Interprofessional Activities Committee, serves on the IIA Executive Council; and Mr. Donald L. Taylor, IMS executive director, is IIA secretary-treasurer.

Major projects of the IIA during the past year were the sponsorship of a statewide Conference on Medical Quackery on May 27, 1964, and a dinner for members of the 61st Iowa General Assembly on January 27, 1965.

Over 200 individuals representing a variety of professional, business, civic and educational organizations attended the Medical Quackery Conference. Statewide newspaper, radio and television coverage was received, and a summary of the program was prepared and distributed by IMS staff to all news outlets, as well as to the conferees, following the Conference.

The IIA continues to make information on health careers available to schools and students, and it is also maintaining its interest and activity in civil defense and disaster planning, and in the formation of county interprofessional associations.

FRED STERNAGEL, M.D., *Chairman*

COMMITTEE ON HEALTH EDUCATION

The "Doctor's House Call" radio series, which began over station WOI, Ames on March 13, 1963, continues on a weekly schedule. To date, over 100 live, 30-minute broadcasts have been presented, in which physicians from throughout the state have appeared to discuss health topics and to answer questions mailed to the station in advance of the programs. Plans are now being made by WOI to tape-record future programs for distribution to other radio stations in the state.

A series of 26 five-minute interviews was completed over WOI-TV in September. General health topics, as well as Society projects implemented "in the public interest" were discussed by IMS representatives on a monthly film series titled "Medicine in the Sixties."

The Committee maintains liaison with the Health Education Division of the State Department of Health, and has cooperated with it in securing speakers and consultants for School Health Education Workshops held during the year. In addition, informational materials on health subjects have been provided by the Society for distribution at these workshops. In 1964, School Health Workshops were held at the State College of Iowa in Cedar Falls, June 15-16; the University of Iowa, Iowa City, July 6-17; and Drake University, July 20-31. The Society also contributed scholarships to cover tuition and expenses for two teachers who were workshop participants. These sessions are attended by approximately 150 school administrators, teachers and school nurses, and they serve to inform members of the teaching profession as to the opportunities and responsibilities to be found in a good school-health program. As an example of this effort, and as a direct result of the 1963 workshop held in Cedar Falls, three Waterloo teachers were inspired to promote the development of a "Health and Safety Research Guide" recently published by the Waterloo School system. The guide was prepared to aid teachers in becoming aware of and knowledgable about medical and health resources available locally.

The IMS was also a co-sponsor of the 16th Annual Community Health Education Workshop, held in Ames, Iowa last July. Representatives of the Society and the Woman's Auxiliary attended and participated in the workshop sessions, which are conducted for health chairmen and personnel from various lay and professional organizations in the state.

Your Committee chairman served as a consultant at the First AMA Conference on Health Education Goals, which was held in Chicago, October 30-31. More than 160 representatives from state and county medical societies, voluntary health organizations, county and state health departments, extension services, and commercially oriented groups which carry out health education programs were in attendance.

As a joint project, the Committees on Health Education and Public Relations transmitted information to the presidents of all county medical societies concerning the establishment of speakers bureaus, and to date, 11 counties have set up bureaus at the local level. In this connection, on numerous occasions, the IMS Speakers Bureau has obtained guest speakers to address both professional and lay audiences on medical subjects.

The Committee continues to furnish articles on health subjects to WALLACES' FARMER for publication in its "Iowa's M.D.'s Say—" column.

In answer to the many requests which are received each week at the headquarters office, health information literature and films are provided to individuals, schools and civic organizations.

The Committee will continue its programs to educate the public on matters of health.

CRAIG D. ELLYSON, M.D., *Chairman*

Reports of Special Committees

COMMITTEE ON INDUSTRIAL HEALTH

The Committee on Industrial Health met on January 13, 1965, to consider several matters, principal among them being the probability of a change in the state law with regard to choice of physician under Workmen's Compensation. The Committee is aware that amendments to the present law may be introduced before the 61st General Assembly of Iowa.

At its January 13 meeting, following a review of previous deliberations and a summary of prevailing conditions, the Committee reaffirmed its previous stand, approved by the 1960 IMS House of Delegates, which reads: "In the area of 'free choice of physician' there is no demonstrable reason for any amendment to the present Iowa Workmen's Compensation Law."

As the 1963 House of Delegates recommended, the Committee is interested in and encourages voluntary procedures to facilitate the free choice of physician under Workmen's Compensation.

The Committee stands ready to reconvene on short notice to consider further the specific language of any amendment introduced to change the existing legislation.

Mr. Harry W. Dahl, Jr., the Industrial Commissioner for Iowa and the administrator of the Workmen's Compensation Service, was a guest of the Committee at its January 13 meeting. He reviewed the activities of his department and outlined the legislative recommendations he is making. These include: 1) a consolidated injury reporting system; 2) broadening the industrial commissioner's authority in the area of rehabilitation; 3) extending the list of pre-existing impairments subject to the Second Injury Fund; 4) authorizing a small part of the tax on workmen's compensation insurance premiums to be used to finance the WCS; and 5) a departmental budget which would include provisions for three additional employees.

The Committee recommended to the Executive Council that the IMS give its support to these several proposals.

The chairman of the Committee attended a regional meeting of state chairmen and members of the AMA Council on Occupational Health in Tulsa, Oklahoma, on January 16. A report of the meeting, attended by 15 persons, has been prepared by the chairman, and distributed to members of the Committee.

C. HARLAN JOHNSTON, M.D., *Chairman*

OSTEOPATHIC AND MD-DO LIAISON COMMITTEES

As has become the custom, these Committees are submitting a joint report, since the items considered by them are very closely related. Both Committees continue to be extremely active, they have held several meetings during the past year, and they contemplate holding additional meetings prior to the April meeting of the House of Delegates.

The IMS/ISOPS Evaluation and Enrollment program has continued to operate with a minimum of problems. The following is a status report on the program as of February 15, 1965.

Approved by Judicial Council—131
Approved by County Society (but not by Council)—7
Disapproved by Council—11
Disapproved by County Medical Societies (but not considered by Council)—1
No action taken—25

The Committee wishes to express its appreciation to all the county medical societies that have participated in the program, and compliments them on the professional approach they have taken to this sometimes-delicate subject.

The method of conducting the evaluation by one county medical society is of particular note and should be called to the attention of the members of the Iowa Medical Society. The Scott County Medical Society Osteopathic Committee has had several applications from osteopathic physicians and surgeons to consider. It has based its actions on the actual practice of the osteopathic physician and surgeon as reviewed at the Davenport Osteopathic Hospital. The Committee interviewed the administrator of the hospital and in addition scrutinized a certain number of medical charts completed by the osteopathic physician and surgeon applicant. These hospital charts were picked at random and where carefully reviewed by the Scott County Osteopathic Committee. The IMS Osteopathic Committee feels that the work accomplished by the Scott County Medical Society in this program is commendable, and recommends this procedure for consideration by other county medical societies wherever or wherever feasible.

The Committee continues to receive a number of inquiries regarding relationships between the medical profession and the osteopathic profession in this state. The Committee would like to point out that increasing activity in this field is going on throughout the United States. Many states have programs far more liberal than that which exists in Iowa. Some states are offering to the Osteopathic profession the possible issuance, under certain conditions, of MD licenses to those fully licensed as osteopathic physicians and surgeons. The IMS Osteopathic Committee will continue its close watch upon the national trend regarding relationships between the two professions, and will report to the proper bodies of the Iowa Medical Society when it appears that any change in the Iowa program is indicated.

The Committee and individual members stand ready to assist any county medical society that may be experiencing difficulty in carrying out the evaluation program on a local level.

J. M. RHODES, M.D., *Chairman*

PRECEPTORSHIP COMMITTEE

A meeting of the IMS Preceptorship Committee was held on Thursday, February 4, 1965, at the University Athletic Club, in Iowa City. Those present included Dr. L. D. Caraway, Dr. W. B. Henderson, Dr. D. G. Sattler, Dr. C. A. Nicoll, and Dr. C. E. Radcliffe, members of the Committee; Dr. R. C. Hardin, Dr. W. M. Fowler, Dr. Harold Saunders, and Mr. James W. Turner, guests of the Committee; and Mr. E. W. Hamilton, of the IMS staff.

Dr. Saunders, from the faculty of the U. of I. Department of Sociology and Anthropology, had conducted questionnaire surveys of two "classes" of preceptees (those who graduated from the U. of I. College of Medicine in 1954 and 1955), and he was asked to give a preliminary review of the results. He explained that the first segment of his study was a set of surveys which were conducted in 1953 and 1954, when the respective "classes" were about to go out on preceptorships and shortly after they returned. The second segment was a survey conducted last fall, when the ex-

preceptees had been out of medical school for nine or 10 years.

In 1953 and 1964, the responses from preceptees, Dr. Saunders said, had been interesting to him in that they showed some changes in attitudes toward the program before and after the students participated in it. They sometimes showed increased expectations as regards income from the private practice of medicine, and they provided a basis for comparisons between original hopes and ultimate fulfillment.

Last fall, 222 questionnaires were mailed—106 to members of the first "class," and 116 to members of the second. Of the questionnaires sent to addresses in Iowa, 67 per cent have been returned; of those sent to addresses outside of the state, 78.8 per cent have come back.

Of the 165 physicians who thus far have returned their 1964 questionnaires, 57 (34.5 per cent) are now GP's, and almost three out of five of those GP's are practicing in Iowa. Of the 108 respondents who have become specialists, only about one out of four practices in this state.

Dr. Saunders said that in 1953 and 1954, when the students were first asked, about two-thirds of them said they intended to engage in general practice. Thus, considerably more must subsequently have changed their minds in favor of specialties than changed their minds in favor of general practice. The 1964 survey hasn't provided any grounds for generalizing about the influences that made them change their plans. The questionnaires asked for an evaluation, on a descending scale from 1 to 7, of the importance of the preceptorship in determining the respondent's career choice, and the answers from men who are now GP's averaged 2.82, and those from men who are now specialists averaged 3.87. Since 3.5 would have been "dead center" between "extremely persuasive" and "extremely dissuasive," one can conclude that preceptorships seem to the specialists to have had almost no influence at all upon their career plans, and that preceptorships seem to the general practitioner to have been moderately persuasive.

When asked whether the preceptorship program should be continued, 157 out of 165 doctors have said "Yes."

Members of the Preceptorship Committee were unanimous in saying that surveys like those which Dr. Saunders has conducted should be repeated, since preceptors are now more carefully chosen than they were at first, and since periodic evaluations are generally advisable. Dr. Saunders and the other faculty representatives seemed to agree.

Mr. James W. Turner, a senior in the U. of I. College of Medicine and the SAMA chapter president, said that he and a majority of his classmates are enthusiastic about the preceptorship program. The young men who are intent upon taking specialty training as soon as possible, he acknowledged, are resentful about having to serve as preceptees, at least prior to their spending that month, but they are a minority and some of them actually find the experience worthwhile for the first-hand glimpse it gives them at the business side of medical practice, etc. He remarked that he and several of his friends found, last year, that a student becomes the preceptee, not of just a single physician, but of several doctors or of all the physicians in the community to which he has been sent. Thus, the very most is made of his time, and he is made to feel very welcome. Dr. Fowler said the students' post-preceptorship reports fully bear out Mr. Turner's observations.

Dr. Fowler went on to say that the "matching" of preceptees and preceptors now is conducted by Miss Alice White, the Dean's secretary, on a routine basis; that problems rarely arise; and that the faculty preceptorship committee, of which he is chairman, has had no need to hold meetings. He said that there is no dearth of preceptors.

Dr. Hardin pointed out that whereas only about 23 per cent of physicians throughout the country now regard themselves as general practitioners, between a third and a half of graduates from the U. of I. College of Medicine become general practitioners. He acknowledged that the attitudes and precepts of U. of I. faculty members may not be entirely responsible for the disparity of these figures, since there obviously are more opportunities for general practice than for specialty practice in Iowa, but he said he thinks his faculty helps in getting students to choose general practice and to locate in this state.

He said that a considerable majority of faculty members want preceptorships continued as a requirement for graduation, provided that a few students may be exempted as is now the practice.

Dr. Hardin commented on the responses to an invitation for "Remarks" that had been included in Dr. Saunders' 1964 questionnaire. He had been impressed, he said, by the frequently repeated statements that the College of Medicine hadn't adequately prepared students for the "garden varieties" of ailments which crowd private practitioners' offices, and he said that the College is taking steps to remedy that deficiency. Currently, by means of an 18 page questionnaire, an attempt is being made to find out the sorts of psychiatric problems that are seen in general practitioners' offices, so that instruction in the Department of Psychiatry can better prepare students to meet them. Furthermore, the IMS and the AAGP each has a day during the school year when representatives come to speak to and with medical students, and arrangements are made for general practitioners to speak with small groups of students on other occasions.

The Dean mentioned that he has received considerable numbers of inquiries about the Iowa preceptorship program from medical societies and AAGP chapters in other states, and said that some groups with which he has corresponded have expressed wonder and admiration over the close cooperation that persists between the Medical School and the IMS on the project. Some of the schemes being considered elsewhere, he reported, are to include preceptees from schools beyond the boundaries of those states. The IMS Preceptorship Committee members then briefly discussed the possibility of expanding Iowa's program by getting Iowa physicians to take preceptees from medical schools in Nebraska, Missouri, etc., with the idea of influencing the young men to locate in Iowa.

The Committee members and the faculty representatives fully agreed that although Dr. Saunders' survey confirmed their long-standing suspicion that the preceptorship program hasn't recruited many general practitioners for Iowa, (1) it is a valuable segment of student training; (2) it facilitates cooperation between the Medical School and the IMS; and (3) it definitely should be continued.

L. D. CARAWAY, M.D., *Chairman*

RURAL HEALTH COMMITTEE

During recent years, the Rural Health Committee

has conferred with the personnel of the Agricultural Extension staff at Iowa State University, Ames, regarding the health-education aspects of 4-H Club programs, and has provided materials designed to encourage routine immunizations and choice of a family doctor, for use in the Ag. Extension's work with the organizations it sponsors. The Committee has also provided a physician to address the 4-H Clubs' annual Health Camp, near Madrid, each summer.

At meetings held in October and November, the Committee made plans for a campaign designed to encourage physicians to protect their patients against the various diseases for which prophylaxis is now available, but particularly tetanus and smallpox.

The Committee now has a print of the Mayo Clinic film "Tetanus and Its Prevention" (1963), and is asking all county medical society officers and chiefs of medical staffs in hospitals throughout the state to make arrangements to show it at their meetings.

In addition, the Committee plans to have a series of articles on immunization published in the JOURNAL OF THE IOWA MEDICAL SOCIETY, and perhaps to get out a series of mailings to doctors. One of the Committee members said it is his custom to give whatever immunizations or boosters seem required whenever he gives periodic physical examinations, and that when he attends a patient for an open wound, he gives him tetanus antitoxin in one arm and tetanus toxoid in the other. Rarely, he said, does the patient fail to return for his second injection of tetanus toxoid.

If the requisite promotional materials can be secured, the Committee plans also to undertake an immunization campaign aimed at the lay public. Curiously enough, it seems that few posters and leaflets, and no motion pictures, have been developed for use in persuading Americans to keep their immunizations current.

J. W. GAUGER, M.D., *Chairman*

COMMITTEE ON BLOOD BANKING

The Committee on Blood Banking continues to follow closely the Federal Trade Commission hearing examiner's ruling in the Kansas City case that antitrust statutes apply to blood banks and that the nonprofit Community Blood Bank of the Kansas City Area, Inc., the Kansas City Area Hospital Association, and 14 hospital pathologists acted in restraint of trade in refusing to purchase blood from commercial firms. The current status of the decision will be presented in a supplemental report.

The Committee continues to support legislation to remove non-profit blood banks from antitrust considerations.

In light of recent action in Chicago, it appears that the American Red Cross's original agreement with the American Medical Association to obtain approval from county or local medical society groups before establishing or activating blood procurement facilities has been abrogated. There have been attempts to expand Red Cross blood banking operations in Iowa despite resistance by hospitals and county medical societies involved.

The American Medical Association convened a Conference on Blood and Blood Banking in Chicago on December 11-12, 1964, to motivate the medical profession to evaluate and implement blood banking requirements and to participate generally in local blood banking affairs. Pertinent developments from the Conference will be presented in a supplemental report.

J. L. LAYTON, M.D., *Chairman*

CHIROPRACTIC COMMITTEE

No problems have been referred to the Chiropractic Committee. Chiropractic status seems considerably less important than does that of the "Great Society."

BRUCE F. HOWAR, M.D., *Chairman*

DOCTORS' ASSISTANTS ADVISORY COMMITTEE

Meetings have been held with members of the Medical Assistants' officers on two occasions, and efforts are being made to encourage their further progress, particularly in increasing membership.

Also, considerable time has been spent in the development of a medical assistants' training program at the community college in Fort Dodge, Iowa. It is felt that graduates of this program will further increase the membership of this Medical Assistants' organization.

The chairman attended the Annual Meeting of the Iowa Medical Assistants' Association.

O. N. GLESNE, M.D., *Chairman*

RELATIVE VALUE STUDY COMMITTEE

The Relative Value Study Committee during the past year has not held a meeting. As members of the Iowa Medical Society know, a statewide fee survey has been conducted during the past year. Results of this survey will not be used to formulate a new relative value study booklet but will be available to the IMS for use in negotiating usual and customary fee programs with third parties that make payment for physicians' services.

The Relative Value Study Committee will continue to review the development of relative value indexes in other states, to determine whether or not recommendations are in order for future use of the relative value index in the state of Iowa.

FRED STERNAGEL, M.D., *Chairman*

USUAL AND CUSTOMARY FEE SURVEY COMMITTEE

Pursuant to instructions from the 1964 IMS House of Delegates, the Usual and Customary Fee Survey Committee has devoted considerable time and effort this past year to developing and distributing a comprehensive fee survey. The goals of the project are: 1) to filter out and suggest remedies for present fee inequities in the state MAA program; and 2) to provide current usual and customary fee information by county for use in future negotiations with all third parties.

Several meetings of the Committee were held, during the summer and fall, to develop an effective survey questionnaire. The Committee invited the various specialty groups in the state to suggest procedures for inclusion in the questionnaire. These responses were considered, and the Committee set about developing what it believed to be a comprehensive questionnaire. More than 600 medical procedures were included in the printed survey, covering, it is estimated, better than 95 per cent of the procedures performed in the state.

A series of advance mailings were planned prior to the actual distribution of the survey questionnaire on November 21. A deadline for return of the questionnaire was indicated as December 15.

The survey was separated into four basic components: 1) Medical Service; 2) Surgery; 3) Radiology; and 4) Pathology. Members were asked to list their

usual fees only for those procedures they perform. Each survey contained a card to be signed by the physician and mailed independently of the survey to the IMS headquarters. Only the doctor's county was requested on the survey questionnaire. This arrangement permitted the surveys to remain anonymous.

It was reported to the IMS Executive Council at its January 14 meeting that an overall response of 72.1 per cent had been received. A total of 1,456 had been returned to that point. IMS councilors whose districts had counties with a low level of response were asked to make a final effort to increase the percentage of replies in these several counties. This effort has brought some additional responses.

Bids have been received from two data processing firms covering tabulation of the survey. The project has been turned over to the favorable bidder, and it is anticipated that up-to-date county ranges of usual and customary fees of Iowa physicians will be completed in advance of the 1965 annual meeting.

The chairman wishes to express his appreciation to the members of the Committee, each of whom has made a valuable contribution to the project.

C. V. EDWARDS, SR., M.D., *Chairman*

COMMITTEE ON NATIONAL EMERGENCY MEDICAL SERVICE

The IMS Committee on National Emergency Medical Service, in cooperation with the State Department of Health, the Iowa Civil Defense Administration, the Iowa Interprofessional Association, and the Health Mobilization Service of the U.S.P.H.S., sponsored a Stateline Training Course on Health and Medical Services in Disaster on November 17-18 in Des Moines. The course was presented for members of the medical and allied health professions, and for others with health mobilization responsibilities to orient and familiarize them with the various medical problems which would be faced in a national emergency. Course subjects included the medical effects of nuclear weapons, natural disasters, management of mass casualties, emergency treatment of burns, environmental health problems, etc.

It is anticipated that similar training programs will be conducted in other areas of the state, and Mr. Ed Hresko, Director of Health Mobilization for Iowa, will work with individual committee members in setting up local programs in the various civil defense areas.

Through the "In the Public Interest" section of the September issue of the IMS JOURNAL, all Iowa physicians were urged to take the lead in implementing medical civil defense at the local level.

Close liaison is maintained between the Committee and Mr. Hresko. At a meeting of the Committee held last fall, he reported that there are now 20 pre-positioned emergency hospitals throughout the state, and although they are currently restricted for use in civil defense emergencies only, it is probable that there will be a change in regulations to permit utilization of the hospitals in times of other disasters. An additional six hospitals are to be placed in Iowa counties sometime in the future. In order to obtain an emergency hospital unit, a community must have a workable utilization plan and adequate storage space for the hospital.

At the recommendation of the Committee, excerpts from the "Civil Defense News Digest," a publication of the Office of Civil Defense, continue to be published in the IMS JOURNAL in order to enhance communications between the Civil Defense Office and physicians throughout the state. This feature has been called to the special attention of physician members of county civil defense and disaster committees, which were established several years ago to work with local civil defense directors. A physician serves as committee chairman in each county, and the membership also includes a dentist, a veterinarian, a pharmacist, a nurse, and a hospital administrator.

The IMS film "Disaster Planning" has been utilized several times during the past year by Iowa physicians and hospitals, and by out-of-state medical groups.

The Committee will continue to work with county medical societies, allied health professions, and state agencies on matters of civil defense and emergency medical service.

ROBERT C. LARIMER, M.D., *Chairman*

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

The Advisory Committee to the Woman's Auxiliary reports that Iowa's organization for physicians' wives continues active participation in and support of projects in its assigned areas. The Auxiliary members have cooperated with county medical societies and the state society in various programs, as their services were asked for or needed by the parent organization.

The Auxiliary is striving to overcome those traits and practices which have traditionally characterized women's groups, and are making every effort to win recognition not only from the medical profession but from the lay public as well through the development of their national president's objective "Better Health—Better World" and that of the state auxiliary's president, "Achievement Through Knowledge." Continuing growth on this basis is certain to enhance the image of the physician and the physician's wife through her work in the community and to emphasize her serious concern in helping her physician husband provide medical leadership to create a better world through better health.

There are members-at-large in each of the counties where a county Auxiliary has not been organized, but there is little doubt that the wives of all the doctors, working as a group, would find their efforts more enjoyable as well as more effective. As key persons in their communities, however, members-at-large are a valuable outlet for disseminating health information.

In the past year, county Auxiliary presidents have become members of the State Auxiliary's Board of Directors. This is advantageous in that it enlists their concerted effort at improving communication and liaison with the county Auxiliaries. Their attendance at Board of Directors meetings, held three times each year, provides valuable exchanges of ideas, and provides them first-hand information on programs to complement the activities of their county medical societies.

The Auxiliary's AMA-ERF Committee has continued its fund-raising projects, expanding this activity to include the Medallion Christmas Card project. The Iowa Auxiliary's contribution to AMA-ERF, earmarked for use in Iowa, surpassed its previous efforts.

The Community Service Committee is called on from time to time to assist with various endeavors. Three of its continuing projects are, namely: The Volunteer Health Service Award, which is presented at the Annual Meeting to an outstanding lay woman in this field; sponsorship of the AAPS Essay Contest on free enterprise and private medical practice; and cooperation with the Iowa Society for Crippled Children and Adults in sponsoring the Handicapped Craft Sales. Seven of these sales have been conducted so far this

year, and four additional sales are tentatively scheduled.

The Health Careers Committee continues with the sponsorship of Future Nurse and Health Careers Clubs. The Health Workshops set up by this Committee in various sections of the state have been enthusiastically received. Programs on the allied health fields have been planned in conjunction with hospital tours, and representatives of various paramedical professions appear on the Workshop programs that are attended by members of high school F.N.C. & Health Careers Clubs.

The Health Educational Loan Fund Committee continues its activity in assisting nursing and technology students with their training. The Fund now totals in excess of $15,000 and has made its 66th loan. The repayment experience has been very good, and thus the Committee is able to make a few new loans each year. The Benefit Dance sponsored by the Auxiliary during the annual meeting adds measurably to the Fund. The members of the IMS have been most cooperative in purchasing tickets, and thus have been playing an important part in assisting students in nursing and technology.

Through the Auxiliary's Legislative Committee, the membership is kept informed on all health legislation pending or enacted at both state and national levels. The chairman of this Committee is invited to attend the meetings of the IMS Legislative Committee, and though she receives directives from the National Auxiliary, she always seeks approval from the Iowa Medical Society. This Committee cooperates in every possible way with the IMS.

The International Health, Mental Health, Rural Health and Safety Committees have all carried on the suggested programs in their particular areas with great success.

THE WOMAN'S AUXILIARY NEWS continues to be an excellent source of information for the members; Auxiliary officers in other states and at the national level ask to be kept on our mailing list, and many articles from it have been reprinted at the national level in the BULLETIN and the AMA NEWS as well as in the Auxiliary publications of other states.

Several counties have sponsored and have made the "Medicine and Religion" program known to ministerial associations. We hope that their activity will be a factor in forging better understanding between physicians and the clergy.

Even though Auxiliary membership is steadily increasing, it is still short of 100 per cent, and the Advisory Committee continues to urge county medical societies to help organize Auxiliaries in their areas.

FRANK G. OBER, M.D., *Chairman*

COMMITTEE ON GROUP INSURANCE

The Committee on Group Insurance has continued to review the group insurance programs which have been established for members of the Iowa Medical Society. The last meeting of this Committee was held Wednesday, October 28, 1964. The following are comments on each of the coverages which are in being at the present time:

GROUP BLUE CROSS AND BLUE SHIELD

The IMS Statewide Group Blue Cross and Blue Shield program for its members continues to be very successful. In studying the experience of this group during the past year, we noted that the average length of stay in the hospital for members of the IMS group was 13.9 days, which is somewhat higher than that of comparable groups covered by Blue Cross and Blue Shield. All in all, the experience was very good, however, and it was necessary to provide for only a slight increase in the premium rates, effective January, 1965.

As in the past, an open-enrollment period was held during the latter part of 1964 which provided an opportunity for those individuals not then enrolled to participate in this group plan. Seventy-nine physicians took advantage of that opportunity and were enrolled. It is hoped that the members of the Society will keep in mind that there are certain features in this special program which we do not believe are present in other groups.

GROUP LIFE PROGRAM

With the administrators of the Group Life Program, the Committee reviewed the experience of the past year. The experience with this group continues to be favorable; however, we do not believe that many new members of the Society are taking advantage of the opportunity to enroll and secure coverage in this group. We continue to recommend that the members study the advantages of the coverage available to them.

GROUP DISABILITY PROGRAM

The Committee studied the group disability coverage now in effect, reviewed the benefits provided, the premium rates and the extent of the coverage, and compared those features of the IMS plan with those of similar types of coverage available on the market. It is quite apparent that the program we now have is an excellent one and that it compares favorably with other plans. The program is working out very well. There have been no major problems in its administration, and no complaints have come to the attention of the Committee. We are advised that the claim experience has been satisfactory. The Committee continues to recommend this program to members of the Society not now enrolled in it.

Any member who desires information pertaining to the group life or group disability coverages should contact Mr. William R. Prouty, of The Prouty Company, 2124 Grand Avenue, Des Moines, Iowa 50312.

W. O. PURDY, M.D., *Chairman*

IOWA BAR LIAISON COMMITTEE

No problems were referred to this Committee for consideration, and no meetings of the Iowa Bar Liaison Committee were held in the past year.

J. M. TIERNEY, M.D., *Chairman*

MEDICARE CLAIMS COMMITTEE

The Medicare Claims Committee has continued to aid the IMS staff in processing Medicare claims. The members of the Committee have served primarily as consultants, and it has not been necessary for them to hold a formal meeting to adjudicate Medicare cases. It is felt the program continues to operate in a satisfactory manner for all involved, including the federal government, the patients and physicians of Iowa.

The Committee welcomes any questions that Iowa physicians may have regarding Medicare rules and regulations or the method of computing payment for authorized services.

J. H. KELLEY, M.D., *Member*

COMMITTEE ON PARAMEDICAL SERVICES

The Committee on Paramedical Services has entered into an exchange of thoughts with the Iowa Chapter of the American Physical Therapy Association this past fall and winter concerning the desirability of a state statute requiring the licensure of physical therapists.

The Committee met on November 27 to review its previous deliberations on this subject and to examine a new request from the physical therapists for support in their efforts to be licensed. Accompanying their request was a bill identical to the one proposed to the 60th Iowa General Assembly by the physical therapists.

After considering its previous position and giving consideration to the arguments advanced by the physical therapists, the Committee held to its position of supporting voluntary registration of physical therapists and other paramedical workers and, in principle, opposing licensure by government. The Committee indicated its wish to continue working with the Iowa Chapter of the APTA on a voluntary program aimed at enhancing the image of the physical therapist and eliminating the use of the designation by the unqualified.

The Committee, after reviewing the proposed bill submitted to it, called the attention of the physical therapists to certain definite weaknesses. Among them are: 1) the need for a more accurate definition of the practice of physical therapy; 2) the need for specifying the nature and composition of the proposed board of examiners; 3) the need for a requirement permitting licentiates to practice only on prescription from or under the supervision of a physician; and 4) the need for giving specific attention to methods of policing the licentiates and those who would attempt to circumvent the statute and practice without being licensed.

These observations were subsequently relayed to the physical therapists. It was indicated that the Committee would be willing to consider and comment upon any further legislative proposals which may be drafted.

The physical therapists responded to the Committee's letter in which the aforementioned weaknesses were pointed out. They indicated that they would present a revised legislative draft to the Committee for its consideration. This proposed legislation, in rough draft form, was received a day or two prior to the preparation of this report, and has not as yet been fully evaluated.

IMS representatives met in mid-February with members of the Iowa Chapter of the American Physical Therapy Association. Reactions to the revised licensure bill as proposed by the physical therapists were offered by the IMS representatives, particularly with regard to the definition of physical therapy and to provision for a medical doctor on the physical therapy examiners' board. It is the understanding of the IMS these suggestions will be incorporated into the bill before it is introduced. The IMS does not expect to take a legislative position for or against the proposal.

F. E. THORNTON, M.D., *Chairman*

POLICY-EVALUATION COMMITTEE

The Policy-Evaluation Committee has not held a meeting during the past year. Recently Iowa Medical Service has referred a claim problem to the Policy-Evaluation Committee for review and suggestion. Information is being obtained regarding this matter, and it will be considered by the Committee at the earliest possible date.

C. V. EDWARDS, SR., M.D., *Chairman*

COMMITTEE ON RADIATION CONTROL

On September 15, 1964, a special meeting was called by the Iowa Commissioner of Public Health. Among the group present were members of the Iowa Medical Society Committee on Radiation Control.

The basic purpose of the meeting was to discuss the overall needs of the Iowa State Department of Health, and particularly those essentials which can be secured only through legislation. Because of the many legislative items being proposed, an attempt was made to establish a priority list. It was felt that because of the large number of bills to be presented, not all could be expected to receive favorable consideration from the Iowa General Assembly. One conclusion was that radiation control legislation, while pertinent and ultimately essential, was perhaps one item that should not be included among the many measures to be presented to the 1965 Iowa General Assembly by the State Department of Health.

The State Department of Health has formulated a voluntary radiation-evaluation program. This program will not require legislation, and as mentioned, will be voluntary in nature. The general plan of procedure is (a) a survey of state operated equipment, e.g. mobile X-ray units, equipment in state operated hospitals, etc., (b) a survey of X-ray equipment in hospitals, (c) a survey of X-ray equipment in practitioners' offices (M.D., D.O., chiropractic, etc.)

Arthur P. Long, M.D., acting commissioner of public health, has reviewed this proposed program with committees of the Iowa Medical Society, and will consult with the IMS as to the best method of approaching physicians individually and collectively on this matter.

The Committee on Radiation Control will continue to follow this voluntary program, and will make necessary reports to the Iowa Medical Society.

F. R. PETERSON, M.D., *Chairman*

COMMITTEE ON MEDICINE AND RELIGION

The basic objective of the Committee on Medicine and Religion is to bring together physicians and clergymen of all faiths at the local and state levels for the study and discussion of mutual problems and common concern for the total welfare of the patient.

Continued effort has been made to stimulate interest in medicine and religion at the county level. Approximately 50 per cent of the county medical societies have appointed medicine and religion committees, and many meetings of physicians and clergymen have been held at the local level.

A program guide, which includes suggestions for scheduling joint meetings, discussion topics, etc., has been sent to each county chairman.

It is hoped that county medical societies which have not already appointed committees will do so at an early date.

The members of the State Committee met with clergymen from the Protestant, Roman Catholic and Jewish faiths, and the executive director of the Iowa Council of Churches, to acquaint them with the medicine and religion program that has been established by the medical profession to improve liaison and com-

munication between physicians and clergymen, and a great deal of interest was exhibited by our guests.

A special orientation program for county medicine and religion chairmen, as well as representatives from counties which do not have established committees, was scheduled on December 9, 1964, but had to be postponed because only a few physicians indicated they could be present. However, the Committee plans to re-schedule this meeting at an early date, and then develop a second conference to which clergymen will be invited to attend and participate.

OTTO N. GLESNE, M.D., *Chairman*

COMMITTEE ON OPTOMETRY

The Committee members have been provided informational material regarding the practice and goals of the optometrists. It has not been necessary to call a meeting of the Committee since no specific problems have been referred to it for consideration.

A. H. DOWNING, M.D., *Chairman*

COMMITTEE ON EXFOLIATIVE CYTOLOGY

At the time of this report, no specific problems have been referred to this Committee, and it has not met.

In connection with the current health activities of the federal government, suggestions have been made regarding the routine performance of cervical smears on patients admitted to hospitals. A question regarding additional schools for cytoscreeners in the state of Iowa has also been raised recently.

It is anticipated that a meeting of the Committee will be called prior to the annual meeting, and that these specific items will be discussed.

K. R. CROSS, M.D., *Chairman*

IMS PATHOLOGY-BLUE SHIELD STUDY COMMITTEE

During 1964, the special IMS Pathology-Blue Shield Study Committee appointed by the Board of Trustees submitted a copy of its final report to the Board. The Committee was officially discharged by the Board of Trustees, subject to call.

C. E. RADCLIFFE, M.D., *Chairman*

SUBCOMMITTEE ON MEDICAL PRACTICE IN HOSPITALS AND NURSING HOMES

The Subcommittee on Medical Practice for Hospitals and Nursing Homes did not meet during the past year, for there were no important problems referred for its consideration.

ARTHUR P. ECHTERNACHT, M.D., *Chairman*

PUBLICATION COMMITTEE

The editors of the JOURNAL endeavor chiefly to publish review articles and synopses designed to save reading time for physicians in keeping abreast of current concepts in medicine and surgery, and up-to-the-minute reports on health problems of immediate importance in Iowa. In addition, they transmit information to the IMS membership on socioeconomic matters, report the deliberations and actions of IMS officers and committees, and items of personal news about physicians.

The best that can be said of JOURNAL advertising revenue is that it has become no more disappointing during the past year than it had been in previous periods. The editors are continuing their economies in an effort to keep the publication as slight a debit item as possible in the IMS budget.

Physicians are asked to bear in mind that the JOURNAL has *never* shown a profit and was never meant to do so, and that it is quite important in maintaining communication between the Society and its members.

At the prompting of firms that publish various trade journals, the Internal Revenue Service is at least considering the possibility of levying current and back taxes on the advertising revenues of medical society journals. It is by no means clear that journal revenue should be taxed in instances where outgo exceeds intake, but the IRS philosophy seems to be that it should be taxed to the extent that the publication is self-serving. In other words, if medical information takes up no more than half the pages in each issue, it is supposed that half of its advertising revenue should be subject to tax. This is an alarming possibility.

DENNIS H. KELLY, SR., M.D., *Editor*

STATE CLAIMS REVIEW COMMITTEE

The State Claims Review Committee during the past year has had referred to it approximately 18 cases involving services rendered Medical Assistance to the Aged recipients or Blue Shield subscribers, and one case involving a private health insurance contract. These cases have in each instance been forwarded to the appropriate county medical society for review and recommendation, as is in keeping with previous actions of the IMS Executive Council and House of Delegates.

The largest number of cases have involved the Medical Assistance to the Aged program. The types of problems referred to the IMS have included (1) billing for mileage while visiting hospitalized patients, (2) billing for in-office laboratory services rendered while the patient was hospitalized, (3) the number of vitamin B-12 injections and office visits in relation to the diagnosis under MAA, (4) billing for anesthesia on a procedure basis and not providing information as to the amount of time involved, (5) the amount of surgical fee for a specific procedure involving two physicians, (6) utilization of private-duty nurses and (7) the amount of fee charged for a specific service.

In most instances the county medical society has been prompt in handling the request from the State Claims Review Committee and has provided appropriate recommendations. There are instances, unfortunately, wherein the county medical society is perhaps taking an undue amount of time in arriving at a decision. The State Claims Review Committee understands and well appreciates the amount of work involved in reviewing claims and the possible effect any recommendation might have on the physician involved, on the patient and on the third party requesting the assistance of the Iowa Medical Society. The Committee hopes that each county medical society will establish proper administrative mechanisms for reviewing claims, since the Iowa Medical Society has always taken the position that third-party programs should utilize the services of organized medicine, both at a state and county level, in adjudicating problem cases involving physicians' services.

The State Claims Review Committee stands ready to answer any questions that may arise regarding the method of handling problem cases, and will provide any assistance requested by a county medical society

to aid it in arriving at a proper recommendation on cases under review.

L. O. GOODMAN, M.D., *Chairman*

COMMITTEE ON VOLUNTARY HEALTH AGENCIES

The Committee on Voluntary Health Agencies, a new instrumentality, has attempted during the past year to define its scope of activity for the future. The Committee will devote its efforts toward establishing better liaison between the Medical Society and Voluntary Health Agencies at the local level. Evaluating the ever-expanding numbers of voluntary agencies and giving them some type of accreditation are measures to be considered.

The Committee was represented at the National Voluntary Health Conference sponsored by the American Medical Association in September, 1964.

C. E. SCHROCK, M.D., *Chairman*

(This concludes the material that was published in the HANDBOOK FOR THE HOUSE OF DELEGATES.)

The presentation of Supplemental Reports was the next order of business. Except as hereafter noted, each report was referred to the appropriate reference committee for study.

SUPPLEMENTAL REPORTS OF THE BOARD OF TRUSTEES

Supplemental Report I: General Activities

Presented by S. P. Leinbach, M.D.
Chairman, Board of Trustees

(Referred to the Reference Committee on Reports of Officers, except for the portion having to do with amending the Articles of Incorporation, which was referred to the Reference Committee on Articles of Incorporation and By-Laws.)

As has been done the past two years, the 1965 Supplemental Report of the Board of Trustees to the House of Delegates will be presented in four sections, and in the following manner:

Report "I" on General Activities—which I shall give now.

Report "J" on IMS Finances—to be discussed by Dr. Sunderbruch.

Report "K" on the Building Project—which will be presented by Dr. Seibert.

And, finally, Report "L" on Blue Shield—which I shall present.

After studying your 1965 HOUSE OF DELEGATES HANDBOOK, there should be no doubt in your mind that a tremendous amount of work has been completed by your officers, committee members and staff since we met together last April. There is no need to take the time to enumerate the hundreds of activities undertaken and completed, but we would like to highlight a few of the major accomplishments of the past year, and bring you up to date on current activities and interests:

1. *The Usual and Customary Fee Survey:* This survey, which was initiated last November, has been completed, and a status report will be given by the committee chairman. The importance of this survey—and the results of it—cannot be overestimated, since it will provide usual and customary fee information, by county, for use in future negotiations with all third parties.

2. *Medical Aid for the Aged:* Thanks to the excellent cooperation of the members of the Board of Social Welfare, and especially Dr. Elmer Smith, director of its Division of Medical Service, we have been able to dispose of most of the problems that have arisen in connection with the MAA Program. We believe the plan has operated effectively. This subject has been dealt with in depth in other committee reports in the HANDBOOK, and in supplemental reports.

3. *Association of the Professions:* The Iowa Medical Society has continued its interest in the development of an association of the professions, particularly in view of the encouragement provided by the House of Delegates last year in connection with this project. Recently, a member of the staff attended the annual meeting of the Michigan Association of the Professions and much of the information obtained at that meeting will assist in future planning for the establishment of a similar association in Iowa. We have taken the initiative where this program is concerned, and, as requested a year ago, will attempt to maintain it.

4. *Conference on Medical Quackery:* Soon after last year's Annual Meeting—on May 27—the Iowa Interprofessional Association, of which the Iowa Medical Society is a member, sponsored a statewide conference on medical quackery here in Des Moines. Over 200 individuals representing a variety of professional, business, civic and educational organizations attended the meeting and a detailed program summary prepared by Society staff was mailed to all conferees, as well as to all Iowa news outlets. Needless to say, this was a very worthwhile public service project, and a great deal of favorable publicity was received throughout the state.

5. *1964 Fall Conference for County Medical Society Officers and Other Representatives:* Approximately 160 physicians representing over two-thirds of the county medical societies in the state attended this conference which was held on Sunday, September 13. Following the meeting, a detailed report was provided all invited county representatives and guests, and a program summary was also published in the IMS JOURNAL for the information of all Society members. These conferences serve to enhance liaison and communication between the state and county medical societies, and although it may be too much to hope for, perhaps some time in the future we can have 100 per cent attendance.

Last year's program was excellent. It included a very informative discussion concerning the Individual Responsibility Plan, as implemented in California. Dr. Joseph Boyle, of Los Angeles, was the speaker. This subject was presented in compliance with a previous recommendation from the House of Delegates that IMS members be provided background information on the Individual Responsibility Plan.

I should like to take this opportunity to announce that arrangements are being made for the 1965 Fall Conference program, which will be held on either the first or second Sunday in October. At the recommendation of the Society's Interprofessional Activities Committee, and with the approval of the Executive Council, the afternoon session will be jointly sponsored by the IMS and the Iowa Pharmaceutical Association, and the program will be devoted to subjects of common concern and interest to medicine and pharmacy.

6. *County Medical Society Meetings:* Upon invitation, Dr. Otis Wolfe, president, visited over 25 per

cent of the county medical societies to discuss IMS activities, and other officers also took part in several meetings at the local level. We believe Dr. Wolfe, who frequently spent two or more nights a week over a period of five months traveling over the state, should be highly commended for the time and effort he put forth in completing this grueling schedule and for taking the Iowa Medical Society to the "grass roots."

7. *American Medical Association:* I am sure the members of the Society received with pride the news that Dr. Donovan F. Ward, of Dubuque, was elected to the office of president-elect of the AMA last June. As you know, Dr. Ward assumed the office of president in August, following the tragic death of Dr. Norman Welch, of Boston, the then president. Dr. Ward has carried out his duties in an outstanding manner and has been a most effective and articulate spokesman for organized medicine. He deserves high praise for the job he is doing in our behalf. The Society, on its own and in cooperation with the AMA, has participated in various events in Dr. Ward's honor, both prior to and following his installation as AMA president.

In reference to the AMA, I should also like to report that approximately two months ago, a TWX machine was installed in the Society's headquarters office, which permits immediate communication between the AMA, the Iowa Medical Society and over 40 other state medical societies. The only expense incurred by the IMS in connection with the installation and use of this equipment is for messages originating at the headquarters office.

8. *Special Fact-Finding Committee Regarding Usual and Customary Fee Programs:* We have followed with interest the development of a "usual and customary fee" program introduced into the quad-cities area by the Aetna Company. We were alerted about this plan last December, and referred officials of the Aetna Company to the Scott County Medical Society for advice and guidance concerning its implementation in that area. Simultaneously, a fact-finding committee was appointed to conduct a thorough study of this type plan. One meeting has been held between IMS officials and representatives of the insurance industry, and a report will be presented to the House of Delegates from this committee. It is a recommendation of the Board of Trustees that this study committee be maintained since its work has not been completed.

9. *The Iowa Medical Foundation:* Several of your Society officers also serve on the Board of Directors of the Iowa Medical Foundation. Early last fall, each member of the IMS received an informational brochure outlining the function and objectives of the Foundation, and we hope all physicians will give serious consideration to actively supporting this important project. Dr. George Scanlon, president of the Foundation, will report on the current status and anticipated activities of this organization.

10. *Public Information Campaign:* The chairman of the Public Relations Committee will outline Society activities implemented to inform the people of Iowa about medicine's position concerning the financing of health care for the aged. The members of the Board of Trustees feel that an outstanding and effective public information program was developed and implemented, and the physicians and staff who were involved in this project are to be highly complimented.

The Board wishes to emphasize that the Iowa Medical Society could not even begin to maintain its position as one of the most outstanding and effective medical organizations in the country without the excellent support, cooperation and assistance it receives from all its members.

In concluding this report, the Board of Trustees wishes to pay high tribute to the members of our staff for their outstanding contributions to organized medicine. Without their efforts, their dedication, and their loyalty to and on behalf of physicians, the many activities we have carried out in the past—and those we anticipate in the future—would be entirely impossible. Each member of the staff deserves our deepest appreciation.

Mr. Donald L. Taylor, who heads this tremendously effective group as executive director, deserves special commendation. For years, he has given unlimited hours—both day and night—to forwarding the causes of the medical profession, and through his great abilities as an executive we have achieved remarkable success.

Don has brought recognition to the IMS and himself through his many activities at the national, state and community levels. We are proud that he was selected by his fellow executives as president of their national association and that he was also elected president of the Iowa professional and trade executives association. He also serves as secretary-treasurer of the Iowa Interprofessional Association; as a member of the Walter L. Bierring Memorial Fund Committee—and did the bulk of the work in connection with the fund-raising for this memorial, which will be included in the new IMS headquarters office. Locally, he has been active in the Greater Des Moines Chamber of Commerce, having served this past year as its program chairman, and was presented two awards by the Chamber for his achievements.

At various meetings throughout the country, your Society officers are continually reminded of the high regard and esteem in which Don is held by AMA and state medical society executives.

The Board of Trustees has spent considerable time in evaluating Mr. Taylor's relationship to, and his position with, the Iowa Medical Society. For the following reasons, and with the highest motivation, the Board of Trustees unanimously recommends to the House of Delegates that the title of "executive director" now held by Mr. Taylor be changed to the title of "executive vice-president":

1. To appropriately recognize Donald Taylor's contributions and dedication to the medical profession and the principles for which it stands.

2. To acknowledge Mr. Taylor's abilities as a highly qualified and experienced medical society executive—in our opinion, the outstanding medical executive in the country.

3. To lend additional prestige to Mr. Taylor in his position as chief executive officer for the Iowa Medical Society, especially in his dealings with officials of other professional and business organizations.

There is a current and increasing trend on the part of many professional, business and trade associations, both within and outside the state, to dignify the position of their chief executive officers by utilizing the title "executive vice-president." The Iowa Medical Society is a leader among these organizations, and its chief executive officer should have a title comparable to that of other professional and business executives.

The Board wishes to stress that although a title change will not increase his monetary return, it will

serve to recognize Mr. Taylor's efforts and achievements in our behalf, as well as our complete confidence in his judgment and capabilities. We strongly believe that Don Taylor has earned and deserves the title of "executive vice-president."

The following formal recommendation, which proposes an amendment to the Articles of Incorporation and By-Laws, has been intentionally couched in terms to permit flexibility in the designation of executive personnel titles:

"*Resolved,* That the Amended and Substituted Articles of Incorporation of Iowa Medical Society, as amended, be and hereby are amended as follows:

"1. By striking therefrom the whole of the last sentence of Article IV, Section 3 thereof, which reads as follows: The Board of Trustees shall employ a general administrative officer to be known as the Executive Director of the Society, who need not be a physician or a member of the Society.

"2. By striking the whole of the last sentence of the first paragraph of Article IV, Section 14 thereof, which reads as follows:

"The Board of Trustees may employ an Executive Director and assistants for the Society, none of whom need be a physician or member of this Society, and shall fix the salaries and other compensations of the Executive Director and all other persons employed by or for the Society.

and substituting in lieu thereof the following:

"The Board of Trustees shall employ such executive and administrative personnel as it shall from time to time determine. Such personnel need not be physicians or members of the Society. The Board of Trustees shall fix their salaries, other compensation, and other terms of employment, and shall from time to time determine the titles by which such personnel are to be known.

"*Be It Further Resolved,* That the Chairman of the Board of Trustees and the Secretary of Iowa Medical Society be and hereby are authorized to sign, acknowledge, record and publish the foregoing Amendment as the Ninth Amendment to the Amended and Substituted Articles of Incorporation of Iowa Medical Society, and to do any and all other things required by law to execute, complete, and place in lawful effect said Amendment."

This concludes the report on General Activities. I'm sure any member of the Board of Trustees would be willing to visit with any member of the Society concerning past and future activities.

It is now my pleasure to call upon Dr. John Sunderbruch, a trustee, who will present Supplemental Report "J" on IMS finances.

Supplemental Report J: Finances

Presented by J. H. Sunderbruch, M.D., Trustee

(Referred to the Reference Committee on Reports of Officers. For final action by the House of Delegates, see the report of the reference committee.)

Last year, we reported that in order to conserve Society funds, the following curtailments were in effect:

1. The total pagination of the JOURNAL OF THE IOWA MEDICAL SOCIETY has been reduced to the extent feasible, keeping in mind the prestige the JOURNAL lends to the Society.

2. Legal services are utilized only when necessary, consistent with good business judgment and on a fee-for-service basis.

3. Staff have been reassigned, wherever possible, to conserve manpower and salaries.

4. The Baldridge-Beye Memorial Fund allotment, previously taken from dues, was eliminated.

5. The building depreciation fund was eliminated from the budget.

To a limited degree, these measures have been successful. For the calendar year 1964 Society expenses exceeded income by $7,202.23; in 1963—$23,232.89; 1962—$12,793.26 and in 1961—$8,509.20. It was because of these repeated annual deficits that the Board of Trustees asked the House of Delegates in 1964 to increase dues, effective January 1, 1965.

Even though the Society has no outstanding indebtedness, except the new building, previous deficits have, for practical purposes, depleted the Society's reserves.

When the Board established the 1965 budget, it was agreed that of the $35 dues increase per member, $20 would be set aside for the financing of the new Society headquarters building, effective January 1, 1965.

The matter of financing the new headquarters building project will be presented in a separate report.

We are of the opinion that income for this year will be adequate to meet expenses, but we don't expect to be able to add to the Society's reserves.

Members of the Board of Trustees will be in attendance at the hearings of the reference committee on Reports of Officers for the purpose of answering questions regarding the Society's financial affairs.

Dr. Seibert, a trustee, will now present supplemental report "K" on the building project.

Supplemental Report K: Building Project

Presented by C. W. Seibert, M.D., Trustee

(Referred to the Reference Committee on Reports of Officers. For final action by the House of Delegates, see the report of the reference committee.)

For several years the House of Delegates has considered recommendations for the construction of a new Iowa Medical Society headquarters office. The Board of Trustees is pleased to announce that construction of a new home for the IMS has begun.

The House of Delegates in 1962 gave authority to the Board to investigate and prepare plans for adequate facilities for the office of the IMS. In 1963, the Board reported to the House that a three-acre tract of land had been purchased at Tenth and Grand Avenue in West Des Moines. The House of Delegates commended the Board for the property acquisition and reaffirmed an action of a previous House of Delegates instructing the Board of Trustees actively to pursue architectural construction and methods of financing a new building. Again in 1964 the Board of Trustees made a complete report to the House of Delegates, setting forth in detail the size and location of the property in West Des Moines with architectural sketches of a proposed building, and asked for specific authorization from the House of Delegates to proceed with final building plans.

By action of the 1964 House of Delegates, a Building Committee was appointed to act under the supervision of the Board of Trustees, and it was empowered to proceed with deliberate speed with building plans and contracts at the already-acquired site.

During the past year, the Building Committee has met on numerous occasions to consider plans for the new headquarters office. At this time I should like to present various slides which will graphically illustrate what has been accomplished.

Slide No. 1: This is an artist's conception of the new headquarters office. The building is a square structure, 78′×78′. The exterior is of Norman brick in a harvest-brown shade. You will note that the building is surrounded by columns of quartz-aggregate concrete. The property has several fine trees which will be retained to add to its aesthetic value.

Slide No. 2: This slide sets forth the plan of the main floor. There are several offices around the perimeter of the building with the middle portion serving as a stenographic pool. Private offices are arranged to facilitate and coordinate the work of the Society. The

Bierring Memorial Room is located on the main floor. The next slide is an illustration of this room.

Slide No. 3: The Bierring Memorial Room will be used as a conference room in addition to providing working facilities for physicians visiting the headquarters office. Funds for furnishing the Bierring Memorial Room will be donated by the Bierring Memorial Committee, composed of representatives from the various health groups. The Bierring Committee was created to establish a lasting memorial to the late Dr. Bierring. Appropriate memorabilia will be included in a display case.

Slide No. 4: This sets forth the floor plan of the lower level. Perhaps the most important feature of the new headquarters building is adequate meeting space. In addition to the conference room on the first floor, there will be two conference rooms in the lower level. The smaller of the two basement conference rooms will accommodate 16 to 25 persons. The larger conference room will be used for meetings of the Executive Council and will normally be arranged to accommodate from 40 to 50 persons. However, this same conference room can be converted to theater-style seating and serve much larger meetings; in fact, it would then comfortably accommodate from 175 to 200 persons.

Slide No. 5: The area of the building will be 12,168 square feet.

Slide No. 6: The general contract has been awarded to the Weitz Company, of Des Moines, on its low bid of $172,040.

Slide No. 7: The mechanical contract went to One Trip Plumbing and Heating, of Des Moines, at $71,341.

Slide No. 8: The electrical contract was let to Johnson Electric, of Des Moines, at a cost of $18,989.

Slide No. 9: The cost per square foot of the new headquarters office is $21.56. It is the feeling of the Board of Trustees and the Building Committee that this is reasonable for the type and quality of construction contemplated.

Slide No. 10: Again we should like to show you the artist's conception of the new building. You will be extremely pleased with the parking facilities available at the rear of the new building. It will be very adequate for our purposes.

The Board of Trustees has asked the Building Committee to explore methods of financing the new office building and to report recommendations to the Board of Trustees as early as possible. The Board believes very favorable financing can be arranged.

Incidentally, you will recall we reported that perhaps, at an appropriate time, part of the three-acre tract of land on which the Society's building will be constructed could be sold. Merely to indicate there is interest in this location, I want to report that within the past two weeks the Society was contacted to determine whether or not it would be willing to sell 125 front feet. A firm offer was presented, which if accepted would represent one-half of the original purchase price of the three acres.

The Board of Trustees has not had opportunity to give serious consideration to this offer; further, it has been the attitude of the Board that it should be very deliberate in considering the sale of any of this land, keeping in mind future needs and the fact that the remaining unused property will experience greater appreciation once the Society's new headquarters is completed.

Every effort will be made to keep the members of the Iowa Medical Society informed on the progress of construction. We believe every Iowa physician will have reason to be proud of the new IMS home.

On behalf of the Board of Trustees and as Chairman of the Building Committee, I want to express appreciation to the members of this Committee: Drs. John Sunderbruch of Davenport, George Scanlon of Iowa City, John Gustafson and Dwight Wirtz of Des Moines. We are especially indebted to Doctors Gustafson and Wirtz for their advice and counsel. We learned in our deliberations that these men are not only fine physicians but are experts in the building business.

Dr. Leinbach will now complete the report of the Board of Trustees with Supplemental Report "L."

Supplemental Report L: Blue Shield

Presented by S. P. Leinbach, M.D.
Chairman, Board of Trustees

(Referred to the Reference Committee on Blue Shield. For final action by the House of Delegates, see the report of the reference committee.)

A year ago, this House of Delegates approved the following recommendations:

". . . that Blue Shield turn to the Iowa Medical Society for guidance and approval under the following situations:

"(1) When new contracts are being considered.

"(2) When changes or new interpretations of existing contracts are contemplated.

"(3) When changes are proposed regarding the philosophy and technique of paying claims.

"(4) When information comes to light disclosing abuses of the Plan. (These should be referred to the appropriate grievance committee.)"

Further, ". . . that a progress report on IMS-Blue Shield relations shall be presented to the Executive Council no later than November 1, 1964, and if during that period of time it is determined that the Society and Blue Shield cannot establish reasonable working relationships, a special meeting of the House of Delegates be called for the purpose of considering a friendly parting of the ways between the IMS and Blue Shield."

The Board is pleased to report progress in its negotiations with Blue Shield, while at the same time admitting there are many areas which will require continuing attention. We have come a long way but recognize we still have some distance to travel—and we cannot predict the obstacles that may impede the road to the establishment of totally harmonious relations.

We have been successful in accomplishing the following:

1. Iowa Medical Society and Blue Shield approval of a joint statement of intent, which is in direct response to the recommendations of the House of Delegates in April, 1964.

2. Iowa Medical Society and Blue Shield approval of a revised version of the Memorandum of Understanding which was originally consummated on September 12, 1956.

Copies of these two documents, identified as Exhibits I and II, are enclosed with Supplemental Report L in your packets, and are highlighted as follows:

Exhibit I—Joint Statement of Intent: This joint statement, approved by the Blue Shield Board of Directors on October 25, 1964, and the IMS Executive Council on October 28, 1964, concludes that:

. . . obtaining IMS approval would not be mandatory, but seeking to obtain it would be (i.e., when new contracts are being considered, when changes or new interpretations of existing contracts are contemplated, when changes are proposed regarding the philosophy and technique of paying claims, when information comes to light disclosing abuses of the Plan.)

. . . in the event IMS approval is not obtained and Blue Shield cannot accommodate its position to that of the Medical Society, then Blue Shield shall proceed as it believes it must, and the IMS would evaluate its position and proceed in accordance with its own best interests.

. . . the statement is not intended and shall not be construed to accomplish an intermingling of the two corporations, with the assumption of concurrent liabilities.

We yielded to Blue Shield on the point of IMS approval not being mandatory because of the possibility of legal implications which concerned Blue Shield officials.

Exhibit II—Memorandum of Understanding: The revised Memorandum of Understanding, approved by the IMS Executive Council on January 14, 1965, and the Blue Shield Board of Directors on January 24, 1965, concludes that:

1. An IMS/Blue Shield Liaison Committee shall consist of six members of Iowa Medical Service, who must also be members of the Iowa Medical Society; three of whom shall be members of the Board of Directors of Iowa Medical Service (Blue Shield), and three of whom shall be members of the IMS Board of Trustees.

In the original memorandum of understanding it was not stated as a requirement that the Iowa Medical Society representatives had to be Blue Shield participating physicians. In the joint sessions it was pointed out by Blue Shield officials that it could not legally appoint physicians to serve on its committees unless they are participating physicians.

2. The function of the Liaison Committee will be to consider problems of mutual interest to the two organizations, and to serve as the Nominating Committee to the Blue Shield Board of Directors.

3. It is contemplated the Liaison Committee will submit at least two nominations for each vacancy to be filled.

In this connection, it is the judgment of the Board of Trustees that the requirement of two candidates for each vacancy to be filled on the Board of Directors satisfies the request of Montgomery County Medical Society Resolution Number 29, adopted by the House of Delegates in April, 1964, as follows: "Resolved that the House of Delegates recommends to Blue Shield that it amend its By-Laws to provide a choice of candidates for each vacancy by leaving an appropriate space for a write-in preference for each position on the ballot."

4. The Iowa Medical Society will elect to its Executive Council and to its House of Delegates two Directors of Iowa Medical Service (Blue Shield) from a list of four or more nominated by the Liaison Committee, these representatives to serve as members of the Executive Council and House of Delegates.

5. Blue Shield will elect to its Board of Directors three Directors-at-large to be nominated by the Liaison Committee from members of the Executive Council or from Committee Chairmen of the Iowa Medical Society, such nominations to be from a list of two or more members for each vacancy submitted by the Board of Trustees of the Iowa Medical Society.

Previously, the Society submitted a list of three names to fill its offices on the Blue Shield Board of Directors, but in keeping with the concept that there should be two candidates for every Blue Shield Board position, the memorandum was amended to require a list of six, or two for each of the three positions.

6. The Senior Executive Officer of the Iowa Medical Society will be invited to attend meetings of Blue Shield members and the meetings of the Blue Shield Board of Directors. The Senior Executive Officer of Blue Shield will be invited to attend the meetings of the Iowa Medical Society Executive Council and House of Delegates.

This section of the understanding was amended to eliminate the requirement that the chief executive officer of the Medical Society be invited to Blue Shield Executive Committee meetings.

7. The Iowa Medical Society and Iowa Medical Service (Blue Shield) are separate legal entities, and the Directors of the corporations have inviolable fiduciary relations to the corporation they serve, their members, and in the case of Iowa Medical Service, its subscribers, and it is mutually understood that the Memorandum of Understanding is not intended and shall not be construed to accomplish an intermingling of the corporations with the assumption of concurrent liabilities.

The development and adoption of these two very important documents by the Iowa Medical Society and Blue Shield required literally hundreds of hours of negotiations, great patience by all concerned, and considerable give and take on both sides. However, we believe the joint statement and the Memorandum of Understanding represent a foundation on which we can build for the future.

We hope the existence of these documents will now make it possible for representatives of the Society and Blue Shield to consummate an understanding on the implementation of the usual and customary fee concept, particularly as it applies to the Blue Shield Blue Chip contract.

On February 10, 1965, and again on March 17, 1965, members of the IMS Board of Trustees and the Executive Committee of the Blue Shield Board of Directors met in joint session. Their primary purpose was to discuss the usual-and-customary-fee concept, with particular reference to paragraph number nine of the Blue Shield Blue Chip contract, as follows: ". . . a charge will be deemed customary, usual and reasonable if it does not exceed the general level of charges by others who render such services under similar or comparable circumstances within the community in which such charge is incurred."

At the February 10 session, Society representatives presented a position statement on the subject of the usual and customary fee concept, which was based on a report developed by the IMS Plan and Scope Committee and approved by the House of Delegates on April 26, 1964. The salient points contained in this statement are as follows:

1. . . . the usual, customary and reasonable charges of the physician should be maintained on the basis of ranges of fees within a county or group of counties, subject to adjudication by county and/or state review committees.

2. A statewide review committee, composed of physicians from various geographic locations and specialty

organizations, should work in close cooperation with constituent county review committees in adjudicating questionable claims, and should assume responsibility for referring such claims to appropriate committees and/or councils of the county or Iowa Medical Society. In situations where there is not a functioning county or multi-county committee, the state review committee should assume its responsibility. Responsibile and knowledgeable physicians should be invited to serve on these review committees.

3. County committees should assume responsibility for ascertaining whether or not physicians within a county are actually charging their usual, customary and reasonable fees.

4. Physicians who insist upon exceeding the range of usual, customary and reasonable charges of their respective counties by consistently submitting higher charges for services rendered should be invited or requested not to participate in usual and customary fee programs. Surveillance over situations where physicians may be involved in any unethical procedures should be continually maintained by appropriate county and Iowa Medical Society committees and/or councils.

5. Adequate staff and facilities should be available in order to properly carry out the administrative duties in connection with programs involving the usual, customary and ordinary charge concept, so as to insure their success.

A copy of the complete position statement on the usual-and-customary-fee concept is also included with Supplemental Report "L," and is identified as Exhibit III.

At the February 10 meeting, Society representatives offered the following comments on the subject of the Blue Chip contract:

1. That the usual-and-customary-fee concept is a sound one and should be maintained.

2. That the successful implementation of usual-and-customary-fee programs depends upon the utilization of county and state claims review committees in adjudicating questionable claims, and acceptance in good faith of committee recommendations. Further, the entire success of the usual-and-customary-fee concept depends upon honoring the decisions of these committees.

We are advised that in the states where the usual-and-customary-fee concept is in operation, and informed county judgments are respected, programs administered in this manner are experiencing almost complete success.

3. That the everyday usage of the term "community" refers to a localized area, generally not beyond county lines.

At the joint session held on March 17, the differences in interpretations of what constitutes a "usual and customary fee" and a "community" were brought sharply into focus. It is the opinion of the officials of the Medical Society that usual, customary and reasonable fees are to be determined on the basis of similar charges for similar services by others in a community —"community" meaning an area encompassing no more than a county, except in the instance where there may be only one physician in a county performing a particular service; then, the basis of evaluation could be broadened. Further, Blue Chip claims should be screened and not paid at $5 a unit, unless it is absolutely determined, generally through the mechanism of the county review committee, that the physician's charge does, in fact, represent a fee in excess of the usual and customary fee in a community, e.g., county.

There is a Blue Chip claim pending wherein the Iowa Medical Society, at Blue Shield's request, utilized established mechanisms for determining whether or not charges submitted by the physicians were, in fact, usual and customary. In this instance, the county review committee differed with the Blue Shield Claims Committee in that its thorough investigation revealed the doctors' charges were usual, customary and reasonable, based on similar charges for similar services by others in the community; hence, the county committee recommended the amount billed by the physicians be paid, in keeping with the Blue Chip contract language, and not reduced as authorized by the Blue Shield Claims Committee. We understand this case will be presented to the Blue Shield Board of Directors for further consideration.

The claim at issue was referred from the Blue Shield Claims Committee to the Iowa Medical Society, and then reviewed by the appropriate county claims committee. The recommendations of the county committee were submitted to the IMS, and subsequently transmitted to Blue Shield. At this point, the claim was returned to the Blue Shield Claims Committee for adjudication. However, at the March 17 joint meeting it was acknowledged, by Blue Shield officials, that a more appropriate procedure would be to refer cases of this type that have been appealed to the Society to either the Executive Committee or Board of Directors of Blue Shield—not the Blue Shield committee that had previously passed judgment on a claim.

There seems to be general agreement that the "Blue Chip" label misleads some physicians to think that this permits them to charge fees in excess of their usual and customary charges, or usual and customary fees charged by others in their communities for similar services under comparable circumstances. Therefore, strong sentiment has been expressed to eliminate the "Blue Chip" label, and replace it with one more easily understood, such as "usual and customary fee plan," "special services contract," etc.

Because of this situation, for which there seems to be no easy answer, it is the recommendation of the Board of Trustees that the House of Delegates consider the following possibilities:

1. That a joint committee, including representatives of the IMS Board of Trustees and the Blue Shield Board of Directors, be requested to begin work at once to select a new name for the Blue Chip contract.

2. That the Blue Chip contract be interpreted to pay fees under this plan when they have met the test of the contract language, i.e., ". . . a charge will be deemed customary, usual and reasonable if it does not exceed the general level of charges by others who render such services under similar or comparable circumstances within the community in which such charge is incurred."

3. That the effectiveness of county review committees be evaluated for a period of one year, utilizing as a basis for determining county usual and customary fees the ranges of fees that will be available from the Iowa Medical Society, as a result of a recently completed fee survey.

4. That if it is determined through proper cooperation between Blue Shield, the Iowa Medical Society and county medical societies, the usual-and-customary-fee program can be made to function in the interest of all parties, consideration be given to introducing an income ceiling, perhaps at $7,500, below which full

service benefits would be provided, and above which Blue Shield members would be indemnified and physicians could make an additional charge.

Officials of the Medical Society believe it important Blue Shield recognize that one of the Society's major objectives is to promote the usual-and-customary-fee concept with all third parties. In this connection, we can report that the MAA program is working quite satisfactorily, and we are optimistic that other programs financed with public funds will adopt this concept.

In the general activities report of the Board, reference was made to the commercial insurance plan that is now utilizing usual and customary fees as a basis of payment. We understand other major commercial carriers will have programs of this type in operation in Iowa in the near future.

In concluding this portion of the Blue Shield report, on behalf of the entire Board and especially the members of a subcommittee of the Board who held numerous meetings with officials of Blue Shield, I want to express sincere gratitude to the Blue Shield Board members who have taken time from their busy schedules to meet with us in an effort to resolve amicably our problems of mutual interest.

Finally we want to pay tribute to Dr. George Scanlon, chairman of the Blue Shield Board of Directors, for the tremendous contribution he is making in behalf of all of us. He has made great personal sacrifices far beyond what should be expected of any one physician.

Before completing this report concerning Blue Shield, I want to bring the House of Delegates up to date on events which have occurred regarding the work of the IMS Pathology/Blue Shield Study Committee. The chairman of this Committee presented a progress report to the House a year ago. Its final report was presented to the Board of Trustees on October 27, 1964. It was received by the Board, and the Committee was discharged.

Subsequently, arrangements were made for a subcommittee of the Board of Trustees to meet with representatives of the Blue Shield Board of Directors to consider recommendations which were incorporated in the final report of the IMS Pathology/Blue Shield Study Committee. Three joint meetings have been held since the first of the year, and there has been agreement, based on recommendations of the study committee, that efforts should be made to implement the following proposals:

1. Itemization of billings for pathology services should be accomplished.

2. The original transfer agreement between the two Blue Cross Plans and Blue Shield should be revised to eliminate outdated and unnecessary stipulations. The transfer agreement was originally drafted to effect the removal of pathology and radiology services from Blue Cross contracts and to incorporate them into Blue Shield contracts.

3. Payment for pathology services should be arranged on a basis comparable to that applicable to other physicians. In other words, for certain income categories, pathologists would accept Blue Shield's payment in full, the same as other participating physicians and would have the opportunity to charge additional fees where indemnity provisions would be in effect.

This is presented as a progress report for informational purposes only. The officials of the Iowa Medical Society, meeting with representatives of Blue Shield, will continue actively negotiating issues involving pathology/Blue Shield relations. We also expect to continue our joint meetings with Blue Shield officials to discuss other matters of mutual interest and concern.

We shall keep the Executive Council apprised of our deliberations and, if necessary, we shall ask for an opportunity to report to the House of Delegates in special session.

I realize it has taken a considerable period of time to present these reports, but it was unanimously agreed by all members of the Board that we should make this imposition on your time because of the importance of the matters discussed. Your patience and indulgence are appreciated.

EXHIBIT I

JOINT STATEMENT

Executive Committee, Iowa Medical Service (Blue Shield) and Representatives, Board of Trustees Iowa Medical Society

House of Delegates Actions—1964
IMS/Blue Shield Relations

To clarify the intent of the 1964 Iowa Medical Society House of Delegates when it recommended "that Iowa Medical Service (Blue Shield) turn to the Iowa Medical Society for guidance and approval" under four stipulated conditions, representatives of the Iowa Medical Society and Iowa Medical Service (Blue Shield) have agreed upon a declaration of intent.

The action of the IMS House of Delegates has been interpreted as follows:

1. The House of Delegates has asked Iowa Medical Service (Blue Shield) to adopt a policy of seeking both guidance and approval of the Iowa Medical Society, and exhausting all reasonable means of doing so, prior to taking final action with respect to the following:

1) When new contracts are being considered.

2) When changes or new interpretations of existing contracts are contemplated.

3) When changes are proposed regarding the philosophy and technique of paying claims.

4) When information comes to light disclosing abuses of the Plan. (These should be referred to the appropriate grievance committee.)

In other words, obtaining Iowa Medical Society approval would not be mandatory, but seeking to obtain it would be.

It is understood that when the word *contracts* is used herein it refers to *subscriber certificates;* furthermore, that changes in the technique of paying claims, referred to in subparagraph No. 3 above, means claim payments which influence the relationship of physicians, subscribers, and Iowa Medical Service (Blue Shield).

2. If such approval of Iowa Medical Society cannot be obtained after all reasonable means of doing so have been exhausted and if Iowa Medical Service (Blue Shield) cannot then accommodate its position to that of the Iowa Medical Society, then Iowa Medical Service (Blue Shield) shall proceed as it believes it must. In this event, the Iowa Medical Society would evaluate its position, and proceed in accordance with its own best interest.

3. This policy should remain in effect indefinitely, but with the understanding that the Board of Directors of Iowa Medical Service (Blue Shield) would reserve the right to modify it or cancel it in the future. How-

ever, any modification or cancellation shall be immediately communicated to the Iowa Medical Society, together with the reasons therefor.

4. It is understood that Iowa Medical Service (Blue Shield) and the Iowa Medical Society are separate legal entities and that the directors of the corporations have inviolable fiduciary relations to the corporations they serve, their members and, in the case of Iowa Medical Service (Blue Shield), its subscribers, and it is mutually understood that this agreement is not intended and shall not be construed to accomplish an intermingling of the corporations with the assumption of concurrent liabilities.

5. It is therefore recognized by both parties that an impasse could result on a specific issue, and Iowa Medical Service (Blue Shield) must legally make the final decision in accordance with Chapter 514, Code of Iowa, and the Articles and By-Laws of Iowa Medical Service (Blue Shield). Nevertheless, Iowa Medical Service (Blue Shield) offers its full cooperation to the Iowa Medical Society in every practicable and feasible way to carry out the wishes of the House of Delegates of the Iowa Medical Society.

The foregoing statement was agreed upon at a joint meeting of representatives of the Board of Trustees of the Iowa Medical Society, and the members of the Executive Committee of Iowa Medical Service (Blue Shield) on Monday, October 5, 1964.

EXHIBIT II

MEMORANDUM OF UNDERSTANDING

Iowa Medical Society—Iowa Medical Service

The Memorandum of Understanding between the Iowa Medical Society and Iowa Medical Service dated September 12, 1956, has been amended and up-dated and certain portions of the original Memorandum have been deleted where the provisions are now covered by the amended By-Laws of the respective organizations. In order to fully understand the purpose and intent of the Memorandum of Understanding, some historical background is necessary.

Historical Background

While the two corporations are separate and legal entities, they had at the time the original Memorandum of Understanding was drafted and still have currently, substantially the same membership and have many common problems and objectives. Iowa Medical Service (Blue Shield) was organized by officers and members of the Iowa Medical Society (then designated as Iowa State Medical Society) and the law requires that a majority of the Directors of Iowa Medical Service be doctors At the same time, it was recognized that Iowa Medical Service has a responsibility to its subscribers and to the public and that it is subject to supervision by the Insurance Commissioner of the State of Iowa. The two corporations were desirous of working together to solve their common problems and attain their common objectives, but it was recognized that they are separate, legal entities and that the affairs of each must be managed by its own Directors, officers and members. It was expressly recognized that a Director of a corporation has a fiduciary relationship to the corporation of which he is a Director which imposes upon him a primary obligation to serve the best interests of the corporation. In recognition of the fact that these corporations had similar interests, yet separate identities, the following actions were taken:

(a) Representatives of both corporations met on March 29, 1956, and arrived at an understanding which was modified at a meeting on April 22, 1956.

(b) As a result of these meetings, both corporations created a Liaison Committee originally consisting of Doctors Lonnie Coffin, Fred Sternagel and R. F. Birge from Iowa Medical Society and Doctors T. D. Throckmorton, H. W. Mathiasen and P. F. Chestnut from Iowa Medical Service. This action was taken at the annual meeting of the corporations in April, 1956.

(c) Iowa Medical Society, on its own initiative, at its annual meeting in April, 1956, amended its Articles and By-Laws to provide for the selection of members of the Liaison Committee and also to provide that two Iowa Medical Service representatives should serve as ex-officio members (without the right to vote) of the Executive Council and of the House of Delegates. Doctors T. D. Throckmorton and J. W. Billingsley were designated at that time as such ex-officio members. Since that time, the By-Laws of the Iowa Medical Society have been further amended to provide for the election of two representatives of Iowa Medical Service to serve in the Executive Council and House of Delegates with the right to vote.

(d) Iowa Medical Service, on its own initiative, elected to its Board of Directors and Executive Committee, Dr. R. F. Birge, Secretary of the Iowa Medical Society and Doctors F. C. Coleman and W. C. Eller were invited to attend Directors' meetings of Iowa Medical Service. Since that time, the By-Laws of Iowa Medical Service have been amended to provide for the annual election to the Board of Directors of Iowa Medical Service of representatives of the Iowa Medical Society.

(e) Donald L. Taylor, Executive Secretary of the Iowa Medical Society was invited to attend Directors' (and Executive Committee) meetings of Iowa Medical Service and Woodrow Sherin, Executive Secretary of Iowa Medical Service was invited to attend Executive Council meetings of the Iowa Medical Society.

With this historical background in mind, the Board of Trustees of the Iowa Medical Society and the Executive Committee of Iowa Medical Service, in joint session on November 18, 1964, agreed on the following revision of the Memorandum of Understanding to supercede the original Memorandum in its entirety, and will recommend its adoption by the governing bodies of the respective corporations.

Revised Provisions

(a) The Liaison Committee shall consist of six members of Iowa Medical Service who must also be members of the Iowa Medical Society, three of whom shall be members of the Board of Trustees of the Iowa Medical Society (said Board of Trustees for the purpose of this Memorandum to consist of the three trustees and the non-voting members of the Board of Trustees) and three of whom shall be members of the Board of Directors of Iowa Medical Service. The Iowa Medical Society members shall be appointed by the President of the Iowa Medical Society with the advice and consent of the Board of Trustees. Iowa Medical Service members shall be nominated by the Chairman of the Board of Directors of Iowa Medical Service with the advice and consent of the Board of Directors, and appointed by the Board of Directors of Iowa Medical Service. If Iowa Medical Service so desires, the six persons so designated may be formally nominated by the Chairman of the Board of Directors

of Iowa Medical Service and appointed by the Board of Directors as members of the Liaison Committee.

The function of the Liaison Committee will be to consider problems of mutual interest to the two organizations and to serve as the Nominating Committee to report to the Board of Directors of Iowa Medical Service. Iowa Medical Service need not commit itself in its Articles and By-Laws to accept the report of the Liaison Committee acting as a Nominating Committee, but it is the understanding of the parties that the Board of Directors of Iowa Medical Service will be encouraged to accept such report and submit it to the membership for vote. In order to further encourage the acceptance of such report, it is contemplated the Liaison Committee will submit at least two nominations for each vacancy to be filled. In the event of an interim vacancy on the Board of Directors of Iowa Medical Service, it will be filled by the Board from one or more names submitted by the Liaison Committee.

(b) *Representation in the Iowa Medical Society by Iowa Medical Service Officials.* The Iowa Medical Society will elect to its Executive Council and to its House of Delegates, as provided in Chapter XIII of the By-Laws of the Iowa Medical Society, two Directors of Iowa Medical Service from a list of four or more nominated by the Liaison Committee, these representatives to serve as members of the Executive Council and House of Delegates. In the event that an Iowa Medical Service representative should cease to be a member of the Iowa Medical Service Board of Directors, it is expected that he will resign as a member of the Executive Council and House of Delegates of the Iowa Medical Society and that a successor Director from Iowa Medical Service will be nominated by the Liaison Committee and selected by the Iowa Medical Society to fill the vacancy. If for any reason a vacancy should occur in any of the aforesaid Iowa Medical Society offices held by an Iowa Medical Service representative, the Iowa Medical Society will elect a successor from the Board of Directors of Iowa Medical Service from a list of two or more names nominated by the Liaison Committee.

(c) *Representation in Iowa Medical Service by Iowa Medical Society Officials.* Iowa Medical Service will elect to its Board of Directors as provided in Article III, Section 2, of the By-Laws of Iowa Medical Service, for a term of one year, three Directors-at-Large to be nominated by the Liaison Committee from members of the Executive Council or from Committee Chairmen of the Iowa Medical Society, such nominations to be from a list of two or more members for each vacancy submitted by the Board of Trustees of the Iowa Medical Society. In the event that such Iowa Medical Service Director ceases to be a member of the Executive Council or a Committee Chairman of the Iowa Medical Society, he shall resign as a Board member of Iowa Medical Service and a successor will be elected in accordance with the aforesaid procedure. Should one of such Directors of Iowa Medical Service cease to serve as such Director for any reason, a successor shall be selected in accordance with the foregoing procedure. One of the three aforesaid Directors shall be a member of the Executive Committee of Iowa Medical Service with the privilege of attendance granted to an observer in the event the regular member cannot attend.

(d) The Senior Executive Officer of the Iowa Medical Society will be invited to attend meetings of Iowa Medical Service members and the meetings of the Board of Directors. The Senior Executive Officer of Iowa Medical Service will be invited to attend the meetings of the Iowa Medical Society Executive Council and House of Delegates. Special invitations may be extended to either of these officers to attend additional meetings where in the judgment of the corporation concerned, assistance may be rendered at such a meeting.

In conclusion, it is repeated again that Iowa Medical Society and Iowa Medical Service are separate legal entities and that the Directors of the corporations have inviolable fiduciary relations to the corporation they serve, their members and in the case of Iowa Medical Service, its subscribers, and it is mutually understood that this Memorandum is not intended and shall not be construed to accomplish an intermingling of the corporations with the assumption of concurrent liabilities.

Approved by the IMS Executive Council 1-14-65.

Approved by the Iowa Medical Service (Blue Shield) Board of Directors 1-24-65.

EXHIBIT III

IOWA MEDICAL SOCIETY POSITION STATEMENT: USUAL-AND-CUSTOMARY FEE CONCEPT

The Officers of the Iowa Medical Society are very much encouraged with the progress that has been made in IMS/Blue Shield relations as a result of the Joint Statement and Memorandum of Understanding which have been consummated.

We are optimistic that the conferences which were held in connection with the negotiation of these agreements have cleared channels of communication and have contributed toward the establishment of a climate conducive to a degree of cooperation which will help us eliminate any misunderstanding that may exist between the IMS, its members and Blue Shield—and that together we can correct that which needs correction, and jointly work toward the development of sound programs that are in the interest of all parties concerned.

The primary purpose of this conference is to discuss the usual and customary fee concept. If we are to join together in cooperative efforts, it would seem that one of the first matters we should consider this evening is a clarification of the following phrase quoted from paragraph no. 9 of the Blue Shield Blue Chip Certificate: "A charge will be deemed customary, usual and reasonable if it does not exceed the general level of charges by others who render such services under similar or comparable circumstances within the community in which such charge is incurred."

It would serve no purpose to drag out old skeletons. Therefore, we propose to base our discussion of this subject on a report of the IMS Plan and Scope Committee approved by the IMS House of Delegates, April 26, 1964. It reads as follows:

The Plan and Scope Committee met in joint session with the Board of Trustees of the IMS on August 27, 1963, to consider the desirability and feasibility of establishing and maintaining the usual, customary and reasonable fee concept for all third party medical care plans, governmental and private—e.g., MAA, Medicare and Blue Shield.

Although the Committee had in mind resolutions considered by the House of Delegates in 1963 concerning the individual responsibility concept, it concluded that a more pressing problem involved development of a definite IMS statement of policy on the application of usual and customary fees. As a result of the joint

meeting, and of a meeting of the Plan and Scope Committee that immediately followed, a statement was prepared by the committee for consideration by the Board of Trustees and Executive Council for the IMS.

The statement, approved by the Executive Council on November 21, is as follows:

1. In implementing the MAA program, and in considering physician participation in future programs, the usual, customary and reasonable charge of the physician should be maintained on the basis of ranges of fees within a county or group of counties, subject to adjudication by county and/or state review committees. In implementing these programs, recognition should be given to the fact that the usual, customary and reasonable fees of any physician may of necessity require revision from time to time, dependent upon the exigencies of his own practice. (It follows that periodical reviews of their fee ranges by the physicians of the respective counties will be necessary.)

2. A statewide review committee, composed of physicians from various geographic locations and specialty organizations, should work in close cooperation with constituent county review committees in adjudicating questionable claims, and should assume responsibility for referring such claims to appropriate committees and/or councils of the county or Iowa Medical Society. In situations where there is not a functioning county or multi-county committee, the state review committee should assume its responsibility. Responsible and knowledgeable physicians should be invited to serve on these review committees.

3. County committees should assume responsibility for ascertaining whether or not physicians within a county are actually charging their usual, customary and reasonable fees. In this connection, it is recommended that under the MAA program the fiscal agent should be requested to submit a list of all physicians' charges for review by the state committee each month. The state committee would in turn refer appropriate and pertinent information to each respective county society review committee so that local surveillance of usual, customary and reasonable charges can be maintained. The county committees would be requested to report back to the state review committee, supplying that committee with such information as is necessary to confirm that reasonable, usual and customary charges are being made.

4. Physicians who insist upon exceeding the range of usual, customary and reasonable charges of their respective counties by consistently submitting higher charges for services rendered should be invited or requested not to participate in the MAA program (or other programs). Surveillance over situations where physicians may be involved in any unethical procedures should be continually maintained by appropriate county and Iowa Medical Society committees and/or councils.

5. Adequate staff and facilities should be available in order properly to carry out the administrative duties in connection with the MAA program and other programs involving the usual, customary and ordinary charge concept, so as to insure their success.

Any further activities of this Committee prior to the Annual Meeting will be presented to the House of Delegates in a supplemental report.

We recognize that Blue Shield has had a major problem in administering the Blue Chip program because of differences of opinion as to what constitutes a community. Apparently, Blue Shield has its interpretation, the Insurance Commissioner has his, and we have ours.

In view of the general attitude of the House of Delegates concerning this matter in the past, it would seem apparent that if a Blue Chip type of program is to be continued with IMS approval, there must be a meeting of the minds on the definition of the word "community."

As set forth in the statement of the Plan and Scope Committee, the Iowa Medical Society believes that the county should be the basic unit to adjudicate usual and customary fee claims, and that there should be enough flexibility to permit consideration by multi-county units or by a state committee when absolutely necessary.

It has been indicated to us, informally, that the Insurance Commissioner will not permit this prerogative to county societies or other units of organized medicine. If this is so, then it would appear that the usual and customary fee type of program is not feasible under Blue Shield, and, therefore, should be abandoned. However, what the Insurance Commissioner has in mind may be that the Board of Directors of Blue Shield cannot delegate this responsibility. With this, we might agree—provided the Blue Shield Board of Directors were willing to accept the informed judgment of medical societies as constituting sound advice.

We also have the impression that the Insurance Commissioner has suggested to Blue Shield that in the interest of fiscal soundness, under the Blue Chip program, payments to physicians should be based essentially on $5 per unit when applied to an issue of the IMS Relative Value Index.

As Officers of the Iowa Medical Society, we do not feel the physicians of Iowa, and particularly the members of the House of Delegates, will knowingly tolerate continuation of the Blue Chip program when the arbitrary fee of $5 a unit is used not only for screening Blue Chip claims, but for paying them.

It is our fervent hope that together we can find an exit from this dilemma in which we find ourselves. If we can do this, then as officials of the Iowa Medical Society we shall be more than willing to join with Blue Shield in asking the House of Delegates to approve whatever corrections must be made in existing programs, and to approve new proposals which will permit Blue Shield to meet its ever-increasing competition and improve its service to subscribers and physicians.

As is known, the Society was successful in negotiating usual and customary fees under the MAA program. In addition, that arrangement for providing payment for physicians is being seriously considered by the Veterans Administration in connection with medical care for veterans in their home communities. Further, officials of the Society were directed by the House of Delegates to attempt converting the Medicare program from a fixed-fee schedule to the usual and customary fee approach. Finally, we are aware that commercial carriers are becoming very aggressive with this type of plan, and based on informal conferences with their representatives, we believe that their efforts will be steadily increased.

We hope you will realize that as a Board of Trustees, it is our responsibility to oversee and attempt to implement basic policies established by the Executive Council and House of Delegates. That is an obligation which we accept with dedication. Furthermore, these policy-making bodies—and in particular, the House of Delegates—will expect a full accounting of our steward-

ship. Therefore, when the House of Delegates meets in April, we shall be prepared to present a chronological accounting of all events that have taken place involving the implementation of policy.

As spokesmen for the Medical Society, we are bound to promote the usual and customary fee concept as it has been interpreted to us by the House of Delegates, which means putting the patient's need and the physician's judgment first, and honoring the end result.

We are most desirous of joining with Blue Shield in encouraging public support of: a. the patient's freedom to choose and change his doctor, b. the physician's judgment to determine the type and extent of treatment, c. the dual right of patient and physician to negotiate a mutually acceptable fee.

On behalf of the AMA Educational and Research Foundation, the chairman of the Board of Trustees, Dr. S. P. Leinbach, presented a check in the amount of $16,295 to Dr. Robert C. Hardin, dean of the U. of I. College of Medicine. Dr. Hardin's response was as follows:

"Thank you, Dr. Leinbach. To say that we can use this is an understatement. I don't wish to spend any great amount of time on saying what we might do with this particular check. I think you all know that, for the most part, it goes to aid students who are studying medicine."

Dr. George Scanlon, president of the Iowa Medical Foundation, reported on the student loan portion of the organization, as follows:

Informational Report on the Iowa Medical Foundation

George H. Scanlon, M.D.

It is a pleasure for me to report to you that the Iowa Medical Foundation, while still in its infancy, has taken several significant strides in the direction of maturity during the past year.

To those of you whose knowledge of the Iowa Medical Foundation may be only slight, may I make the following one or two background statements. The Foundation came into existence in 1963 as an outgrowth of the Iowa Medical Society Educational Loan Fund. It is a non-profit corporation established to engage in, assist, further, promote and contribute to the support of such charitable, educational and scientific activities as are, in general, either directly or indirectly, related to health or medicine. The granting of loans to deserving Iowa medical students will continue to be a principal part of the Foundation's program.

The Foundation operates as an adjunct to the Iowa Medical Society under the direction of a nine-member Board of Directors. The activities of the Foundation are conducted from the IMS headquarters office and the chief executive officer of the IMS is responsible for its day-to-day operation. The Foundation's nine-member board includes the three trustees of the IMS and the two most recent past presidents of the IMS. The remaining directors, one of whom must be an IMS member, are chosen by the five I have just enumerated.

During the period since the last meeting of the IMS House of Delegates, we have produced an informational booklet which seeks to accomplish three basic objectives. These are: (1) to explain the aims, purposes and contemplated programs of the Iowa Medical Foundation; (2) to outline the organizational structure of the Foundation; and (3) to indicate ways by which interested persons may contribute to the work of the Foundation.

This booklet was sent to all members of the Iowa Medical Society in November, and I am pleased to tell you that in the several weeks which followed its distribution, a number of doctors saw fit to make contributions. In this light, we hope that each of you will consider the Foundation every year as you determine the direction of your philanthropic dollars.

The content of the booklet I have mentioned was prepared in such a manner as to make it useful for several years and we contemplate further distribution of it to additional interested persons in the months ahead.

The Board of Directors of the Foundation at its annual meeting last year requested that the Iowa Medical Foundation be permitted to serve as a co-sponsor of the annual Hawkeye Science Fair project. Approval was given to this request by the three other sponsors: the Des Moines Register & Tribune Company, Drake University, and the Iowa Medical Society. Thus, the seventh annual Hawkeye Science Fair, which concluded only last night at the Veterans Memorial Auditorium here in Des Moines, was in part, a project of the Iowa Medical Foundation.

A special Iowa Medical Foundation lecture had been contemplated as part of the 1965 annual meeting. It did not materialize this year, but I am confident that in the years ahead such a lecture will be among the Foundation's postgraduate medical education projects.

I should like now to submit for your information a financial report on the Iowa Medical Foundation.

IOWA MEDICAL FOUNDATION
BALANCE SHEET—DECEMBER 31, 1964

ASSETS:		
Central National Bank & Trust Company	$ 27,586.00	
Iowa State Bank & Trust Company	12,927.22	
Notes Receivable from Medical Students	147,385.97	
100 Shares of American Scientific Corp.	60.00	
		$187,959.19
LIABILITIES AND NET WORTH:		
Notes Payable to Physicians		$ 48,150.00
Net Worth:		
Balance 1-1-64	$132,288.32	
Add 1964 Net Income	7,520.87	$139,809.19
Total Liabilities and Net Worth		$187,959.19

IOWA MEDICAL FOUNDATION
Income and Expense Statement—December 31, 1964

Income		
Interest on Loans	$5,541.07	
Contributions and Memorials	4,820.00	
		$10,361.07
Expenses		
Interest Paid to Physicians	$1,413.33	
Register & Tribune Commercial Printers	1,013.37	
Administrative Expense	300.00	
Legal Fees	112.50	
S.U.I. Photographic Department	1.00	
		2,840.20
Net Income for 1964		$ 7,520.87

As I mentioned earlier, the granting of loans to deserving medical students continues to be a principal activity of the Foundation. I should like to conclude this report by relating to you that which has been accomplished by this loan program.

Total loans entered into since inception of the program	$262,483.42
Loans repaid	$112,821.11
Loans outstanding as of April 11, 1965	$149,662.31
Number of students who have participated	184
Number of loans paid in full	71
Number of loans outstanding	113

At the conclusion of his report, Dr. Scanlon introduced Mr. George Counts, a senior medical student at the U. of I. College of Medicine and one of the recipients of an Iowa Medical Foundation student loan. Mr. Counts addressed the House briefly.

Supplemental Reports of Standing Committees

Prior to the presentation of the Nominating Committee's report, the Speaker pointed out that the procedure for nominations of candidates for the elective offices of the Iowa Medical Society would be the same as in previous years. Notice of the meeting of the Nominating Committee, the meeting of the Committee, and its report, he said, had been in accordance with the By-Laws of the Society. Unless there were an objection, he ruled that the House would follow the custom of previous years in allowing one minute each for nominating speeches and no more than one or two words for seconding speeches.

NOMINATING COMMITTEE

The Nominating Committee of the Iowa Medical Society met on Sunday, March 7, and agreed upon the following slate to be presented to the House of Delegates today. The Articles of Incorporation and By-Laws require that for a candidate to be unopposed, his nomination must be unanimously approved by the Nominating Committee.

Additional nominations may be accepted from the floor, after which the Speaker of the House of Delegates will declare nominations closed.

President-elect	S. P. Leinbach, M.D., Belmond (Nominated Unanimously)
Vice President	K. K. Hazlet, M.D., Dubuque J. M. Rhodes, M.D., Pocahontas
Trustee	J. P. Gallagher, M.D., Oelwein K. E. Lister, M.D., Ottumwa
Speaker, House of Delegates	J. M. Layton, M.D., Iowa City O. D. Wolfe, M.D. Marshalltown*
Vice Speaker, House of Delegates	P. M. Kersten, M.D., Fort Dodge* J. L. Powers, M.D., Estherville
Delegate to the AMA	E. M. Smith, M.D., Des Moines (Nominated Unanimously)
Alternate Delegate to the AMA	C. E. Radcliffe, M.D., Iowa City (Nominated Unanimously)
Councilor—District Two	J. F. Paulson, M.D., Mason City
Councilor District Seven	L. D. Caraway, M.D., Monticello
Councilor—District Eight	J. F. Bishop, M.D., Davenport
Councilor—District Nine	E. A. Larsen, M.D., Centerville
Blue Shield Liaison Delegates to IMS (Two to be elected)	J. G. Fellows, M.D., Ames C. N. Hyatt, M.D., Corydon R. H. Kuhl, M.D., Creston R. C. Larimer, M.D., Sioux City

Respectfully submitted,

V. H. CARSTENSEN, M.D., District 1
WALTER HANSON, M.D., District 2
C. J. SMITH, M.D., Chairman, District 3
R. C. LARIMER, M.D., District 4
R. B. STICKLER, M.D., District 5
C. D. ELLYSON, M.D., District 6
J. E. Tyrrell, M.D., District 7
J. F. BISHOP, M.D., District 8
F. O. W. VOIGT, M.D., District 9
E. E. GAMET, M.D. (Alternate), District 10
J. W. BARNES, M.D., District 11

The report of the Nominating Committee was adopted as presented. Nominations from the floor were requested, and Dr. Paul Kersten, of Fort Dodge, was nominated to stand for election to the office of Speaker of the House of Delegates. Nominations were then closed, and nominating and seconding speeches were presented.

Before proceeding with other reports of standing committees, the Speaker invited Mrs. Howard Ellis, of Des Moines, president of the Woman's Auxiliary, to address the House. Mrs. Ellis' remarks were as follows:

"Dr. Wolfe, Mr. Speaker, Officers and Members of the IMS House of Delegates: It is truly a privilege and a pleasure to bring you greetings and best wishes from the Woman's Auxiliary to the Iowa Medical Society, and to have this opportunity to express to you our sincere appreciation for your unstinting encouragement and assistance.

"The goal of the Iowa Auxiliary could best be expressed by the term 'achievement through knowledge' —knowledge for all of our members which provides an understanding, in depth, of the health care needs, both at local and national levels and of the problems confronting medicine today, of new solutions to some of our old familiar problems—knowledge which would assure that the physician's wife can speak and act wisely and always in the best interests of medicine.

"Translated into deeds, this knowledge has been the guidepost of our Auxiliary achievement. At the beginning of the Auxiliary year we asked our constituent Auxiliaries to evaluate their existing programs, to discard those that would no longer seem to serve a useful puropse, to update their continuing programs, to better reflect Auxiliary service, and to select new projects on the basis of a demonstrated community need and which would complement or augment the objective of their own county medical societies.

"We have tried to emphasize the need to keep programs flexible enough to meet new situations and to emphasize, also, the importance of maintaining good lines of communication with our allied organizations.

"In the same context, we are investigating avenues of service for our members at large and, with the aid of our AUXILIARY NEWS and frequent letters, sharing our knowledge and our achievements with them.

"Reports from our state and county officers have been encouraging. New programs have been developed to meet specific needs, and the ability of the Auxiliaries to realize their purpose has been demonstrated. Most significant to us has been the response of physicians to this approach.

"Authoritative speakers made available by the Iowa Medical Society have provided the knowledge which is essential to directing our activity and to the realizing of our potential.

"County medical societies have, with wonderfully increasing frequency, requested their Auxiliaries to participate in specific programs or to engage in joint activities.

"Gentlemen, the Auxiliary is growing up. We have learned to lay aside petty differences and to use our energies and our ability in corporate endeavor. We are proud of the opportunity and the responsibility that you have accorded us, and we truly desire and merit the compliment of being the good right arm of medicine. With your guidance and wth your assistance, the Auxiliary can direct its activities into meaningful channels, and we can demonstrate that, in this often troubled and confusing world, there are people who care. Thank you."

COMMITTEE ON LEGISLATION

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House

* O. D. Wolfe, M.D., Marshalltown, subsequently withdrew as a candidate for Speaker of the House, and P. M. Kersten, M.D., Fort Dodge, withdrew as a candidate for Vice-Speaker of the House.

of Delegates, see the report of the reference committee.)

This report is being prepared on a dark day for the medical profession. Yesterday, Thursday, April 8, 1965, by a substantial margin, the U. S. House of Representatives passed the most far-reaching and comprehensive health care program that has ever been approved by either chamber of the U. S. Congress. It would serve little purpose for this report to detail the provisions of the legislation, since we are positive that every physician has followed closely the progress of the administration's health care bill, and is aware of the general provisions of the "three layer cake."

This report is being written approximately 48 hours prior to the convening of the 1965 annual meeting of the Iowa Medical Society. When this report is read to the House, a representative of the AMA will be prepared to bring to the members of the House of Delegates an up-to-date report on this legislation, indicating what organized medicine through the AMA and component and constituent societies can do, in the next few weeks, in presenting its views regarding this far-reaching legislation.

Annual Washington Conference: A delegation from the Iowa Medical Society traveled to Washington, D. C., on March 1 and 2, 1965, to meet with Iowa Congressmen and Senators. At a luncheon meeting the Medical Society, with Dr. Wolfe, president, serving as spokesman, presented the profession's position on Eldercare vs. Medicare. I might say he did a wonderful job of presenting our position. We had several favorable comments from legislators on his talk to them. In addition, the IMS representatives had an opportunity to visit privately with each Congressman and Senator (except for Senator Hickenlooper, who was out of the country) to discuss this legislation in detail. Although the action taken on Thursday, April 8, shows that none of the Congressmen changed their position relative to the legislation, it was the consensus of the group that medicine's position was clearly and adequately stated. Over the past 15 years, this annual trip has proved to be one of the most beneficial parts of the Society's overall programs, and we urge its continuance.

State Legislation: The 61st Iowa General Assembly has before it many bills dealing with health. The Committee on Legislation has held various meetings with certain members of the Iowa Legislature to present medicine's position on proposed measures. In order for the membership to appreciate fully the scope of work facing the Iowa Medical Society and the Committee on Legislation, I want to comment not only on the items of particular importance but also on items to which special time has been devoted.

Medical Aid to the Aged: Through legislative bulletins and other media, you are aware that the funds appropriated for MAA during the last General Assembly will not be sufficient to continue the program on its present basis for the remainder of the biennium that ends on June 30, 1965. The Board of Social Welfare is requesting a deficiency appropriation of approximately $320,000, which it estimates will continue the program through the remainder of the biennium. The Medical Society and other health groups support such an appropriation. At this particular time, no action on this matter has been taken by the Iowa Legislature, but it is the opinion of state government leaders that funds will be forthcoming when absolutely essential.

For the next biennium, the State Board of Social Welfare has requested an appropriation of $4,300,000 per year, which, when matched with federal funds, would make a total MAA program of $10,000,000. Governor Hughes has recommended an MAA appropriation of $4,000,000 per year, which in the opinion of the health groups would be adequate. Naturally, there has been a great deal of interest shown by members of the Iowa Legislature in the proposed federal legislation relative to health care for the aged and in the effect it may have on existing state welfare medical programs and appropriations. Although the administration's health program (Medicare), when and if enacted, would make sweeping changes in existing state programs, it is the opinion of the Committee that the Legislature will delay considering the effect of these changes until the 1967 session of the General Assembly. Two provisions of the present MAA program that are of vital interest to the medical profession are: 1. the limit on nursing home care to 180 days immediately following hospitalization (thus limiting wholesale transfers from OAA to MAA) and 2. the mandatory use of a fiscal agent to administer MAA. We are hopeful that these two provisions will be included in the new appropriation bill.

It must be pointed out that if Medicare is enacted in its present form, the states must establish medical programs very similar to the present MAA program, prior to July 1, 1967, and make them all available to welfare recipients (OAA, MAA, ADC, AB, AD).

Reorganization of the State Board of Health: House File 242 has passed the House and is on the Senate calendar. This bill would establish a state board of health composed of nine persons learned in health-related disciplines. The bill would make the Board a policymaking body, rather than merely an advisory one. The medical profession supported the recommendations of the Governor's Public Health Advisory Committee for legislation which would have created a Board of Health composed of four M.D.s, one D.O. and four others, three of whom would have had to be from separate health-related professions. However, because of opposition from several health groups, this type of legislation has not been seriously considered. The Iowa Medical Society has reviewed House File 242, and because of the profession's interest in the creation of a policymaking Board which would be of greater service to the state, the IMS is not actively opposing this alternative piece of legislation.

Hospital Advisory Council: The present Iowa Hospital Advisory Council is composed of 17 persons, mostly professionals, who are responsible for advising the State Department of Health in the expenditure of federal Hill-Harris Act funds for use in hospital construction. By law four M.D.'s serve on the present Council, and they are selected from a list submitted by the Iowa Medical Society. During the last session of the U. S. Congress, requirements for a State Advisory Council were revised to require that the Council include equal numbers of consumers and professionals. House File 372, which has passed the House and is now on the Senate non-controversial calendar, would add nine consumers to the present Council, thereby meeting the requirements of the federal law. This bill is supported by the Iowa Medical Society.

Child Abuse: Senate File 50 has passed the Senate and is on the House calendar. The bill requires reports from physicians, hospitals and almost all health practitioners on suspected cases of child abuse. Reports would be submitted to the county department of social welfare for investigation. The bill contains no penalty provision for those not reporting. This legislation has

also received the support of the Iowa Medical Society.

Licensing of Physical Therapists: A bill to license physical therapists is on the calendar of both houses. Representatives of IMS met on several occasions with physical therapists to discuss the provisions of the bill. One item of special interest is an agreement that the board for licensing physical therapists should include an M.D. Several amendments have been proposed by persons interested in how this bill might affect masseurs, health gyms and similar types of establishments. The IMS will not oppose this legislation, if passed without harmful amendments.

Mandatory PKU Testing: Several bills have been introduced to require mandatory phenylketonuria testing for all newborn infants. The medical profession favors an educational program regarding PKU testing, but has opposed mandatory legislation. A bill, Senate File 463, is on the Senate calendar which would declare it the public policy of this state to test newborns for this disease.

Iowa Mental Health Authority: Senate File 516 and House File 604 would create an "Iowa Mental Health Authority" for the purpose of taking advantage of federal mental health programs. The bill would create a committee on mental hygiene with substantial medical representation including one member of the IMS Subcommittee on Nervous and Mental Diseases. This legislation has received our support.

Mandatory Coverage of Podiatrists by Blue Shield: House File 232 and Senate File 301 purport to require that Blue Shield make payment when podiatrists render a covered service to Blue Shield subscribers. The Iowa Medical Society has actively opposed this type of legislation, basically on the premise that the Iowa Legislature should not force Blue Shield or any other group, be it public or private, to contract to pay for services which the company has felt are not in the best interests either of the corporation or the people it serves. The podiatrists in Iowa have been extremely active in supporting this legislation, and it is quite possible that the Legislature will take favorable action on it. Of interest is the fact that a bill has also been introduced to require Blue Shield to make payment to optometrists for their services, when and if physicians are paid for the same sort of services.

Exempting County Medical Examiners From IPERS: When the office of county medical examiner was created, the Iowa Employment Security Council ruled that physicians serving as county medical examiners must pay into the Iowa Public Employees' Retirement System. The Iowa Medical Society has always felt that county medical examiners are not employees, but rather are independent contractors. A bill has been signed into law, effective July 4, 1965, which will exempt county medical examiners and deputy county medical examiners from the obligation to pay into IPERS.

County Health Departments: The House, only yesterday, passed House File 279, which provides a means for implementing local public health services. The bill would permit the creation of local boards of health, each consisting of 11 members, three of whom must be physicians. The board would appoint a public health officer. The most controversial portion of the bill is a permissive two-mill levy for public health purposes. Although the Iowa Medical Society did not take a position regarding the specific language of House File 279, it supports the principle that counties should be permitted to establish or expand local public health services.

Free Choice of Physician Under Workmen's Compensation: A bill to provide free choice of physician under workmen's compensation, H.F. 73, passed the House early in the session. Because of strong opposition from employers, a compromise bill was passed in the Senate which would permit an employee to retain a physician of his own choice at the employer's expense, to evaluate his claim of permanent disability, should the employee disagree with the determination made by the employer's physician. The amended bill passed the Senate without a dissenting vote.

Protective Eye Glasses for School Children: A bill, S.F. 228, to require school children to wear protective eye classes when participating in certain classes, i.e., shop, chemistry, etc., passed the Senate without a nay vote, and it is felt that it may well be reported on favorably by the House Public Health Committee.

Premium Tax on Blue Cross/Blue Shield: Although a bill on this tax has not been formally introduced, legislation may be proposed which would require a 2 per cent gross premium tax on Blue Cross/Blue Shield. Active opposition to such a proposal is indicated, and it will be undertaken if and when the necessity arises.

Several bills have been introduced to amend the present Iowa MAA law. Many of the proposed amendments are minor in nature, but one or two are of particular interest. House File 579 would remove the obligation of a son or daughter to assume payment for an elderly parent's medical costs, even if the son or daughter were capable of providing financial assistance. House File 623 would remove the requirement that an otherwise eligible person must have paid or committed $50 for health services before being entitled to MAA. Interestingly enough, there is a bill on the Senate calendar, S.F. 541, which would do exactly the opposite of H.F. 623 and would require that the person actually expend $50 before eligibility for MAA rather than merely obligate himself to pay $50 as required under present law.

There are other pieces of legislation that have required the time of the Iowa Medical Society and its legislative representatives. The above report gives some indication of the ever-increasing amount of legislation that is proposed in the health field. Physicians have an obligation to make known to their state representatives and senators the reasons why the medical profession either supports or opposes specific health legislation. There is only so much that can be done on a state level. The real responsibility rests with physicians at the local level, and specifically with the county legislative contact men. At this point, the Committee wishes to express its appreciation to the legislative contact men, who continue to serve as the strongest link in the legislative program of the Iowa Medical Society. Without these men, the efforts of the Iowa Medical Society would be ineffective.

Before closing, I want to urge every legislative contact man and all other interested physicians to attend the Legislative Contact Man Breakfast, scheduled for 7:00 a.m., on Tuesday, April 13, 1965, in the Terrace Room of the Hotel Savery. Tickets are $2.00, and they may be purchased at the Registration Desk at the Hotel Fort Des Moines during the annual meeting, or at the entrance of the Terrace Room on Tuesday morning. Mr. Robert Throckmorton, AMA general counsel, and E. M. Smith, M.D., medical director, State Department of Social Welfare, will present a report on the status of the "Medicare bill," and will outline its provisions, with special emphasis on how this legislation will affect present state welfare medical programs.

Members of the House and Senate Public Health Committee and House and Senate Appropriations Subcommittee on Social Welfare have been invited, in addition to representatives of various health organizations and the state comptroller. This breakfast meeting constitutes an excellent opportunity for you to become better informed on this legislation.

J. H. KELLEY, M.D., *Chairman*

At Dr. Kelley's request, permission was given to Mr. Frank Woolley, field representative for the AMA, to address the House for a few minutes regarding the "Medicare" bill under consideration in the Congress.

NECROLOGY COMMITTEE

(The Speaker asked the members of the House of Delegates to rise during the reading of the names of members of the IMS who had died during 1964. The list appears on page .. of this issue of the JOURNAL.)

MEDICAL-HOSPITAL STATISTICAL COMMITTEE

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

As noted in the HANDBOOK Report of the Committee on Medical Service, the Medical-Hospital Statistical Committee (previously known as Utilization Committee) is about to embark on a utilization survey which will involve selected hospitals in Iowa.

The study has been planned and will be conducted under the direction of a committee consisting of representatives of the Iowa Medical Society and the Iowa Hospital Association.

The purpose of this brief supplemental report is to inform the House of Delegates that plans for the study are proceeding with deliberate speed and to report that July has been established as the target month for launching the six-month pilot study.

The project has received enthusiastic support from the administrators of the selected hospitals. Upon their shoulders rests the responsibility for the collection of the raw data. This material will be collected through the use of the inexpensive Royal-McBee Keysort System. A Royal-McBee card has been devised by the committee which will supply a significant amount of information for analysis.

As indicated in the HANDBOOK Report, when the pilot study is completed a summary will be presented to the Executive Council of the Iowa Medical Society and to the Board of Trustees of the Iowa Hospital Association for appraisal and further direction.

G. G. YOUNG, M.D., *Chairman*

COMMITTEE ON STATE DEPARTMENTS

(Referred to the Reference Committee on Miscellaneous Business. For final action by the House of Delegates, see the report of the reference committee.)

The Executive Council at its March 18 meeting referred to the Committee on State Departments for consideration and recommendation two proposals originated by the State Hygienic Laboratory. The State Board of Health, through Doctor E. E. Gamet who is a member of the Board and a member of the Iowa Medical Society Executive Council, requested the Iowa Medical Society to express an official opinion on these two proposals.

To this end, the Committee on State Departments recommends the Iowa Medical Society endorse the State Hygienic Laboratory's requests, which are:

1. To discontinue the use of guinea pigs as a tool for primary isolation in tuberculosis studies.
2. To discontinue routine bacterial serology for typhoid fever and paratyphoid fevers.

The following information is provided by the Hygienic Laboratory with regard to the first recommendation:

Background: Laboratories examining sputa in tuberculosis studies have been observing an increase in the number of acid fast bacilli (tuberculosis and unclassified *Mycobacteria*) which are avirulent to guinea pigs when inoculated by the subcutaneous route in the inguinal region. However, with the use of several different special culture media it is possible to isolate most of these organisms if sufficient specimens are submitted.

Proposal: Physicians utilizing the services of the State Hygienic Laboratory be notified that at least three sputum specimens should be submitted on each patient and that only isolated cultures will be inoculated into guinea pigs as an aid in species identification and virulence studies.

The following information is offered by the Hygienic Laboratory in connection with the second recommendation:

Background: The routine examination of blood serum for antibodies to the somatic and flagellar antigens of *Salmonella typhosa, Salmonella paratyphosa A* and *Salmonella paratyphosa B* generally presents a rather confused picture. First of all, many in our population have received typhoid immunization and will present titers sometimes difficult to differentiate from true clinical infection. Secondly, from an epidemiological point of view it is necessary to isolate and identify the causative agent. Very few cases of enteritis due to a *Salmonella* species have been diagnosed on changes in antibody levels. Antibodies usually do not appear in the serum of a patient until near the end of the first week after infection. However, in a majority of instances stool cultures become positive at the very beginning and often remain so until convalescence.

Proposal: That physicians utilizing the services of the State Hygienic Laboratory in the surveillance of Salmonella infections be encouraged to submit stool specimens for bacteriological examination.

The Committee on State Departments would like to submit these recommendations for consideration and action by the House of Delegates.

A. H. DOWNING, M.D., *Chairman*

SUBCOMMITTEE ON SAFE TRANSPORTATION

(Referred to the Reference Committee on Miscellaneous Business. For final action by the House of Delegates, see the report of the reference committee.)

At the request of the Iowa State Department of Public Safety, the Society's Committee on Safe Transportation has, for some time, been considering the feasibility of recommending the establishment of a Medical Advisory Board to the Department of Public Safety.

At a special meeting of the committee which was held on March 24, 1965, to consider this matter, reference was made to the following conclusions presented at a National Conference on Medical Aspects of Driver Safety and Driver Licensing by Paul V. Joliet, M.D., chief, Division of Accident Prevention, U. S. Public Health Service:

1. The public must be taught that certain medical disabilities can limit safe driving ability. If the dis-

ability progresses beyond a point, driving must be restricted. If the disability progresses still further, safe driving under any circumstances becomes impossible.

2. The public must be taught that responsibility to drive safely rests primarily with the individual, just as the individual is always primarily responsible for any personal actions that endanger the public.

3. Physicians with patients whose safe driving ability is in question must be made aware that they have an individual responsibility.

4. Medical Advisory committees must be established in each state to provide consultation to motor vehicle administrators about medical fitness of specific drivers, and to work with administrators and others concerned to develop a state plan of action.

At the present time, the Iowa Department of Public Safety has authority to request medical statements from drivers who have obvious need of such, and medical certification of drivers is required by the Department under certain specified conditions. In such cases, the driver must be examined by an appropriate medical specialist before action is taken by the Department in granting a license. It is felt that a Medical Advisory Board would be of valuable assistance in interpreting medical statements, and in making appropriate recommendations concerning drivers-license applicants who have mental or physical impairments which are questionable, insofar as the Department of Public Safety is concerned.

At the March 24 meeting of the Safe Transportation Committee, it was agreed that it would be desirable for the Iowa Medical Society to establish a Medical Advisory Board to the State Department of Public Safety and, if this proposal is approved in principle by the House of Delegates, the Committee should develop specific guidelines in regard to the appointment and function of a Medical Advisory Board, which would be submitted to the Society's Executive Council for final consideration and approval.

The Committee wishes to emphasize that the Commissioner of Public Safety has the ultimate responsibility of determining who should be licensed to operate a motor vehicle.

ARTHUR H. DOWNING, M.D., *Chairman*

SUBCOMMITTEE ON NERVOUS & MENTAL DISEASES

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

The Subcommittee on Nervous and Mental Diseases has examined the status of Mental Health Clinics in Iowa, now existing, and those which may be constructed in the future, in relationship to the new Federal Community Mental Health Centers Act of 1963, Title II, Public Law 88-164.

Background Information: The Standards for Mental Health Clinics of Iowa, as revised and approved by the Executive Council of the Iowa Medical Society on February 28, 1960, outline the purposes of mental health clinics, stating in part that they are "to provide outpatient psychiatric services for those who cannot afford services of private facilities." The Standards further state that a prerequisite to the establishment of a clinic shall be the appointment of a board of directors with membership from (1) board of supervisors; (2) county medical society; (3) schools; (4) courts; (5) clergy; and (6) industry. Another of the prerequisites involves securing the co-sponsorship of the County Medical Society before the actual establishment of the Clinic.

The Federal Public Law 88-164, Title II, states that two of the five "essential elements of comprehensive mental health services" of a community mental health clinic are "outpatient services" and "inpatient services." It further states that eligibility in one service will assure eligibility in any other service, transferred without delay when indicated, and that those responsible for a patient's care within one service can continue to care for that patient within any other service (inpatient—outpatient).

Problem: Mental health clinics as established are afford private care, established under a community board of directors. Mental health centers will provide all essential elements of comprehensive care for private and contractual patients under a private-hospital administrator.

Recommendation: Public Law 88-164, Paragraph 55.212 (c) (v) states, "In cases where two or more of the individual elements of services are provided by different organizations, agencies, or persons, the relationships between the individual elements must be evidenced by appropriate contracts or other formal written agreements among the various organizations, agencies, or persons which make specific provisions for assuring compliance with the criteria set forth in this section."

The Subcommittee on Nervous and Mental Diseases recommends the Iowa Medical Society adopt the position that existing community mental health clinics should retain their separate identity and remain apart in physical structure from any inpatient facility. Further, that any new clinics which may be constructed in the future should be built in keeping with the Community Mental Health Plan developed on the local county level. And finally the Subcommittee recommends the Iowa Medical Society Standards on Mental Health Clinics not be revised at this time.

T. C. PIEKENBROCK, M.D., *Chairman*
H. C. MERILLAT, M.D., *Co-Chairman*

COMMITTEE ON PUBLIC RELATIONS

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

At a special session on February 6 and 7 in Chicago, Illinois, the House of Delegates of the American Medical Association gave official endorsement to the principles embodied in the Herlong-Curtis Eldercare Bill (H.R. 3727) and declared once again strong opposition to the King-Anderson type of legislation.

Four days subsequent to the AMA meeting, the Board of Trustees of the Iowa Medical Society met and gave approval to the implementation of a statewide public information program in Iowa. The program was evolved to accomplish one basic goal: to tell in clear and succinct terms the strengths of Eldercare and the limitations and dangers of Medicare. Those who participated in the development of the Iowa program included the chairman of the Committee on Public Relations, members of the IMS staff, representatives of the Nelson Advertising Company of Des Moines, and AMA personnel. Assistance in financing the program was provided by the AMA on a matching basis. I should like to comment that Don Taylor's staff did a very fine job in preparing the program that was undertaken. I think it would also be appropriate to call

attention to Mr. Don Neumann's efforts on this project. Mr. Neumann, an executive assistant, had the major responsibility in preparing the materials with which you are all familiar.

The Iowa public information program was conceived to use available funds in a prudent manner to bring to the attention of as many Iowans as possible the principal factors in the health care for the aged issue. It sought to gain the understanding and support of Iowans for the Eldercare proposal. It attempted to stimulate the interest of those who were exposed to it to the extent of motivating them to contact their congressmen. The information we have at this point leads us to believe we have been successful in securing the support of a sizable percentage of the Iowa population; and further, we know this support has taken the form of hundreds of letters and messages to members of Iowa's congressional delegation. Dr. Donovan F. Ward, president of the AMA, said in a recent statement to the press, "The Eldercare bill has gained more public support in a shorter period of time than any legislation on health care for the elderly ever introduced in Congress."

The newspapers of Iowa were considered to provide the most readily available and effective means of reaching the largest number of people in the short period of time at hand. It was decided an attempt would be made to reach at least 80 per cent of the households in the state through newspaper advertising. So far as we are able to determine, this 80 per cent target was hit in virtually all counties, and exceeded in many.

Because it reaches 60 per cent of the newspaper-subscribing households in the state, the DES MOINES SUNDAY REGISTER was considered to be an essential and primary vehicle. Authorization was given by the Board of Trustees for the use of full-page, two-color messages in the February 28, March 7 and March 14 issues of the DES MOINES SUNDAY REGISTER. The same basic information was presented in each message; however, a definite effort was made to vary the appearance so as hopefully to arrest the reader's attention on each of the several Sundays. Each message urged the reader either to send a personal letter to his congressman or to sign, clip and send the prepared note.

The next step in the overall effort to reach 80 per cent of Iowa's households came in the form of contact with the county medical societies. It was hoped the county societies would respond affirmatively to an invitation to share in the program by underwriting the cost of advertising space in newspapers in their counties. The Nelson Advertising Company of Des Moines was given primary responsibility for this phase of the program. A letter from Dr. S. P. Leinbach, chairman of the IMS Board of Trustees, was sent together with a letter from the Nelson Company to each county society outlining the plan. This mailing invited and urged the county societies to consider advertising messages in suggested newspapers within their counties. The State Society offered to provide advertising mats in either of two sizes and to handle, through the Nelson Company, arrangements for placing the messages pursuant to instructions from the county societies.

The response from the county societies was most gratifying. Affirmative answers were received from 40 counties. A total of 164 messages were sponsored by county medical societies in 104 different Iowa daily and weekly newspapers.

Wide distribution has been made of several pamphlets. Authorization was given to package and mail approximately 100 of the blue Question-and-Answer folders entitled "Why Eldercare Offers Better Care Than Medicare" to each member of the Iowa Medical Society. Altogether, approximately 230,000 of these brochures have been put into circulation by the State Society office. I have heard a great many comments from patients who have been interested in this material. Apparently it has made quite an impact. Between 20,000 and 30,000 each of the "Write Your Congressman" and "Why Eldercare Is the Best Answer to the Health Care Needs of the Elderly" leaflets have been distributed, in addition to a number of reprints of Dr. Walter Judd's article in the February issue of READER'S DIGEST. Other materials have been distributed in lesser quantities. These have included such items as speech texts, posters, and recordings of Dr. Ward's address at the special session of the AMA House of Delegates.

A mailing to members of the Woman's Auxiliary of the IMS was developed in cooperation with Mrs. Howard Ellis, president of the Auxiliary. This mailing, which included several of the printed items available, urged activity by doctors' wives on the local level in several different ways. Particular emphasis was given to the state Society's newspaper advertising program and the need for organized effort to insure a good response to this campaign. The members of the Auxiliary were asked to help by urging friends, neighbors and all interested persons to write letters or to sign and send the prepared notes in the advertisements.

The support of the several allied health organizations was sought collectively at a luncheon meeting and following this on an individual basis. As far as we know, the Iowa Pharmaceutical Association contributed to the campaign to a greater extent than did any of the other organizations. I think this will be worthy of mention on the local level to your own pharmacists. The IPhA sponsored advertising messages in one issue of the DES MOINES REGISTER and in one issue of the DES MOINES TRIBUNE. Copies of the advertisement were prepared in poster form and distributed to all IPhA members for drug store display. In addition, a mailing was sent to each Iowa physician by the IPhA reaffirming pharmacy's opposition to Medicare and indicating the extent of the association's participation in the current campaign. The Iowa Veterinary Medical Association and other groups lent support to a lesser degree.

Speaking appearances in behalf of Eldercare have been made on television and before civic groups by a number of persons in the state during the past several months. Prominent among those speaking to Iowa audiences have been Dr. Donovan Ward, president of the AMA; Dr. Edward Annis, past-president of the AMA; Robert Throckmorton, general counsel of the AMA; Dr. Otis Wolfe, president of the IMS; and Dr. Jack Liechty, member of the AMA Speakers Bureau. Dr. Ward's speech at the special meeting of the AMA House of Delegates in February was shown on film over KRNT-TV in Des Moines and WOC-TV in Davenport. Television and radio spot announcements as arranged by the AMA have been aired by several Iowa stations.

Several news releases have been distributed to all of the approximately 500 daily and weekly newspapers in the state. One of these mailings included the blue Question and Answer folder. A cursory analysis of clippings from Iowa newspapers indicates wide use

of these items and strong editorial support for the Eldercare program.

A public opinion poll was undertaken by the Iowa Medical Society to determine: (1) what elements Iowans prefer in a program of health care for the elderly; and (2) what knowledge they have of the present proposed health care plans. The survey was conducted by the Des Moines management consulting firm of Batten, Batten, Hudson and Swab, Inc., and was underwritten by the AMA. This scientific sampling showed quite conclusively that a large majority of Iowans, regardless of age, income, political affiliation, or labor union association, oppose the principles of Medicare and favor the principles of Eldercare. Wide distribution has been made of the certified summary of the poll results. Highlights of the poll were introduced into the CONGRESSIONAL RECORD by Representative H. R. Gross. A news release summarizing the poll was circulated to all newspapers in Iowa, and space was purchased in the DES MOINES SUNDAY REGISTER of March 14 to announce the survey's findings. The survey was reported on page one of the March 29 issue of the AMA NEWS and efforts have been made to place the information in the hands of nationally-syndicated columnists.

As this supplemental report is prepared, the expanded version of the Administration's program of health care for the aged is headed for the floor of the House of Representatives with its supporters extremely optimistic. Regardless of the ultimate outcome, history will show, through this information program and those which have preceded it, the position of the Iowa Medical Society, and in this we can take a measure of satisfaction.

May I conclude this report by quoting a wire received by the Iowa Medical Society on March 9. It read: "Mighty proud of the IMS for its vigorous promotion of the Eldercare program." It was signed: Dr. Donovan Ward.

J. G. THOMSEN, M.D., *Chairman*

Supplemental Reports of Special Committees

COMMITTEE ON BLOOD BANKING

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

In reference to the 1963 hearing on Federal Trade Commission charges that commercial blood banks had been boycotted by hospitals backing a non-profit Community Blood Bank in Kansas City, Missouri, the following progress report on events since the last meeting of the House of Delegates is presented:

In an initial decision, a Federal Trade Commission hearing examiner ruled that a conspiracy between the Community Blood Bank of the Kansas City Area, Inc., Kansas City, Missouri, the Kansas City Area Hospital Association and its members and 14 hospital pathologists, had illegally hampered and restrained the exchange, sale and distribution of human blood. The examiner found that respondents used the following means to carry out the plan:

"Refused to use Midwest's blood or to permit it to be used or accepted as replacement of blood furnished by Community;

"Advised prospective customers that Midwest's blood would not be accepted; and

"Utilized North Central District Blood Bank Clearinghouse, an arm of the American Association of Blood Banks, as an excuse not to use Midwest's blood."*

It was pointed out that this is not a final decision of the Commission and may be appealed, stayed or docketed for review. The respondents have given notice of intention to file an appeal for a decision of the full FTC. It is understood now that a decision from the full FTC might be expected in the fall of 1965.

U. S. Senator Edward V. Long (Missouri) and others have introduced legislation (S.1353, 89th Congress) to amend the anti-trust laws to provide that a non-profit blood or tissue bank, or hospital, or physician who refused, or who joins together with others in refusing, to obtain or to accept delivery of blood, blood plasma, tissue, or organs from any other such blood or tissue bank would not be in restraint of trade. The committee urges the Iowa Medical Society to reaffirm its support of this type of legislation, and proposes the adoption of the following resolution:

"WHEREAS, S.1353 of the 89th Congress of the United States would provide that a refusal of non-profit blood banks, non-profit reservoirs of other human tissue or organs, hospitals, or physicians to obtain blood, blood plasma, other tissue or organs from other such blood banks or reservoirs shall not be deemed to be acts in restraint of trade under the laws of the United States; and

"WHEREAS, non-profit blood banks and reservoirs of other tissues or organs, by procuring blood and its derivatives and tissues and organs from volunteer donors, and scientifically processing such materials for human use, provide an essential part of medical care in the United States; therefore be it

"*Resolved*, by the House of Delegates of the Iowa Medical Society that it favors enactment of legislation by the Congress of the United States for the intent and purpose for which S.1353 provides; and be it further

"*Resolved*, that, at the appropriate time, the position of the Iowa Medical Society on S.1353, 89th Congress, be made known to the American Medical Association, to the members of the Congress, and to other interested parties; and be it further

"*Resolved*, that the delegates from the Iowa Medical Society to the American Medical Association urge that a representative of the American Medical Association appear before any committee of the Senate or House of Representatives to which this bill or a similar bill may be referred, and advocate its enactment by the Congress of the United States."

At the Conference on Blood and Blood Banking sponsored by the American Medical Association in Chicago on December 11-12, 1964, it was suggested that where community blood banks already exist, especially those sponsored by physicians and county medical societies, legal opinions should be obtained to determine whether on not the blood banks are functioning in a manner which is acceptable to the FTC, and would not be held as conspiring to restrain the trade of any other blood bank in their areas.

Physicians must keep informed of the newer developments, changing concepts, and growth of blood banking systems. The primary interest of physicians in blood and blood banking must be to secure the widest, most efficient and economical supply of safe, usable blood and blood derivatives for the public. The following specific actions, among others, might be taken by Iowa physicians to exercise their responsibilities in regard to blood banking:

The individual physician should be well informed about blood banking problems so that he can communicate to his own patients the problems involved whenever blood is needed.

Blood bank committees should be active in hospitals and medical societies. In communities, blood bank councils involving knowledgeable physicians and responsible community leaders would often be ap-

* Quotation from FTC official news release.

propriate. Doctors in this council should be appointed by the local medical society.

Technical advisory committees are essential in areas where blood banks are basically under non-medical sponsorship. These committees must be strong and forthright, insisting always on the best possible technical performance for the good of the patient.

State and national leadership by physicians, exercised through blood bank committees is already being exhibited to a high degree and must continue to be so.

The Committee wishes to acknowledge the great contributions made by the Iowa Association of Blood Banks to blood banking in Iowa. The Iowa Association of Blood Banks is attempting to develop uniform procedures for blood banking operations, and the Committee recommends that the Iowa Medical Society urge the Iowa Association of Blood Banks to continue its efforts in this regard. It is further recommended that Iowa physicians be encouraged to stimulate all hospitals, large and small, to avail themselves of the services and information provided by the Iowa Association of Blood Banks.

J. M. LAYTON, M.D., *Chairman*

USUAL AND CUSTOMARY FEE SURVEY COMMITTEE

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

It is a pleasure for me to report that the Usual and Customary Fee Survey Committee has very nearly completed the task assigned to it approximately one year ago.

It will be recalled the Committee was asked to plan and conduct a survey of the IMS membership to determine the fees charged for the most common medical procedures performed in the state of Iowa. The Committee was further requested to refine the collected data with the purpose in mind of providing the Society with a range of usual and customary fees on a county-by-county basis.

The Usual and Customary Fee Survey Committee would like to express its appreciation to the following persons and organizations for their assistance and cooperation in fulfilling this assignment:

(1) The nearly 1,500 Iowa doctors who completed and returned the survey questionnaires. They represent approximately 75 per cent of those surveyed.

(2) The IMS district councilors, the county medical society presidents and other officers of the county societies for their valuable help in stimulating this excellent response.

(3) The several specialty groups who sent formal replies to the Committee's request for suggested procedures to be included in the survey. These included: the Iowa Academy of Ophthalmology and Otolaryngology, the Iowa Academy of General Practice, the Iowa Society of Anesthesiologists, the Iowa Obstetrical & Gynecological Society, the Iowa Dermatological Society, the Iowa Psychiatric Society, the Iowa Society of Internal Medicine, the Iowa Radiological Society and the Iowa Pediatric Society. Other specialty groups made informal suggestions through representatives who served on the Committee. Also of significant value to the Committee was a breakdown of medical claims provided by the Iowa Medical Service.

The procedures followed by the Committee in making the survey are summarized herewith for the benefit of the members of the House of Delegates.

(1) The Committee considered at length in several meetings the procedures to be included in the survey and the nomenclature to be used in identifying these procedures. Coincident with this was the drafting of instructions to be included in the survey to guide the respondents.

(2) The Committee developed a series of informational mailings to be sent prior, during and following the period of the survey.

(3) The Committee coordinated the printing and distribution of the questionnaire.

(4) The Committee obtained competitive bids for the tabulation of the survey and recommended awarding the job to the low bidder, Data Technics, Inc., of Des Moines.

The data processing phase of the project is now completed and the Committee has in its possession the tabulated results. The one remaining step involves a cursory examination of the tabulations by an actuary or statistician. Evaluation of the tabulations by a qualified person in this field will be valuable in determining what, if any, adjustment may be advisable prior to any application of the survey findings.

When this final phase of the survey project has been completed, the Committee recommends that the finished product be presented to the Board of Trustees, and by so doing, giving the Board the authority to use the information as it sees fit, subject to consideration and approval by the Executive Council.

C. V. EDWARDS, SR., M.D., *Chairman*

SPECIAL FACT-FINDING COMMITTEE RE: USUAL-AND-CUSTOMARY-FEE INSURANCE PLANS

(Referred to the Reference Committee on Legislation and Medical Service. For final action by the House of Delegates, see the report of the reference committee.)

Permit me, if I may, at this time to report to you some of the highlights of a recent meeting held here in Des Moines. Our objective at this meeting was to learn about present applications of the usual-and-customary-fee concept by the private insurance carriers and to explore the future potential of this approach.

I would also, with your permission, like to append to my report of this meeting some personal observations based in part on my experiences of the year which has now gone by.

Members of the insurance industry were invited to share in this discussion with representatives of the Iowa Medical Society. Two members of the Iowa Health Insurance Council were present—one associated with the Aetna Insurance Company, the other with the Travelers Insurance Company. Also present were two other Aetna officers—one from the Hartford home office, a man who has had an opportunity to observe the development of this concept nationally; and another, from Davenport, who is the claims supervisor in a pilot program in eastern Iowa which embodies the reasonable-and-customary-fee concept.

Let me outline for you 10 points of interest which came to light during this fruitful meeting. Some of them are inter-related. And at the outset may I say that I believe a real spirit of understanding evidenced itself throughout this frank discussion and there evolved, I further believe, a genuine desire on the part of all present to see this concept fully studied and hopefully adopted as a fundamental principle of health insurance.

Point No. 1—There now exists a new surgical and medical expense benefits plan involving the International Harvester Company and the Aetna Insurance Company. Nationally, this program covers 90,000 employees and represents 22 million dollars in premiums. The program reaches into Iowa to the sizable extent of covering approximately 12,000 persons who are employed in an International Harvester plant in the Quad-Cities area in eastern Iowa. The special advertised features of this plan include: 1) the fact that it is based on reasonable and customary fees; 2) that there is no fixed, rigid fee schedule or coinsurance; and 3) there is freedom of choice of physician.

Point No. 2—While it is clearly too early to evaluate this International Harvester program, which began January 1, it is from all early indications functioning in a satisfactory manner. Aetna representatives in the Quad-Cities are pleased with the relationship they have been able to establish with the Scott County Medical Society. They reported the physicians in Scott County were quick to respond to a request that a review committee be formed to assist in resolving any problems. This same cooperative spirit, they regretted to report, has not been as apparent at involved points outside of Iowa. The claims supervisor administering the program frankly admitted under-paying the claims of non-Iowa physicians in nine instances during March. He said he was prompted to do this partly because of their indifferent attitude, and particularly because of the unwillingness of the non-Iowa county medical society to establish review committees. He went on to comment, and this is a significant point, that he has yet to receive a complaint from any one of the physicians whose claims he rather arbitrarily reduced.

Point No. 3—The range of fees in this pilot program is based on the usual and customary fees as charged by doctors in the Quad-Cities area. The indication was that only in a relatively few instances, when a procedure is seldom performed or performed only by one doctor, would it be necessary to consult charges made elsewhere.

Point No. 4—The insurance industry, based on the comments made at this meeting, is anxious to act in good faith in implementing this concept, and wants to be able to place its confidence in the local doctors through the county medical society. For instance, if the county medical society acknowledges that a member physician performs a certain medical service on a more comprehensive basis and charges proportionately more for this procedure than do his colleagues, the insurer is inclined to pay this man his customary fee. The feeling was expressed that patients, as part of their personal relationship with a doctor, should be made aware of his charges in advance of treatment.

Point No. 5—Programs similar to this one involving International Harvester and Aetna are scheduled to begin in 1966 between the J. I. Case Company and the Metropolitan Insurance Company and between the John Deere Company and the Travelers Insurance Company.

Point No. 6—The success and further growth of this usual-and-customary-fee approach in the area of private insurance will require and will depend upon close cooperation between physicians and the insurance carriers.

Point No. 7—Interest among labor union officials in the development of those group insurance programs continues to increase. Union negotiators are most anxious for their rank-and-file members to know of the benefits which have been secured for them. Recent union bargaining has placed greater stress on benefit programs than on wage increases.

Point No. 8—It was acknowledged that the usual and customary fee approach to the handling of doctors' claims by insurance companies will require more time and better trained personnel than would be necessary under a program employing a fixed fee schedule. This realization underscores the need for the medical profession to offer its close cooperation and assistance whenever possible.

Point No. 9—While payment under the plan examined is made directly to the doctor, the employee is required to assume personal responsibility to the extent of securing and delivering the necessary completed forms to the insurance office. He is subsequently provided a copy of the medical charges for his personal knowledge and record.

Point No. 10—Continued close interest in the development of this concept by doctors is of the utmost importance. An expanding dialogue between the medical profession and the insurance industry should be fostered. Particular note should be taken of the responsible role which individual county medical societies must assume in establishing medical review committees and in cooperating with private insurance carriers in whatever other ways may appear prudent.

Last year when Dr. Edwards handed me the presidential gavel, he included with it a package labeled "The Concept of Usual and Customary Fees." He, as well as other officers of the Society and committee members, labored many hours to establish this basis of payment under the Medical Assistance for the Aged program and to advocate its application to other third party plans where physicians are paid directly for their services.

In addressing this House of Delegates as president-elect, I spoke strongly in favor of the usual-and-customary-fee approach. I'm frank to admit experiences during the past year, not the least of which is the meeting on which I've just reported, have convinced me more firmly than ever that this concept must be maintained in the programs where it already exists and be extended as rapidly as possible to all third parties that assume financing responsibility for health care and pay the physician directly for services rendered.

For at least two decades, the medical profession has conducted its negotiations in a defensive posture. This all too often has encouraged or resulted in compromise. Generally these compromises have occurred where we have negotiated on the basis of a fixed-fee schedule device.

As I have stated previously, a fee schedule is concerned with procedure only and when rigidly imposed, it has the capacity to disregard circumstances, equate physicians, set its own standards of excellence, and make a mockery of service. An adequate or generous fee schedule lures the physician to complacent acceptance of this method as a convenient and requiting substitute for the original concept.

Too late comes the discovery that government has its own devices and will not, in its negotiations, countenance a retreat to the more cumbersome and exacting principle of usual and customary. Too often in what we thought were concessions to improve our public image, we have accepted or agreed to partici-

pate in ill-advised programs. We have discovered too late that even though public sentiment is not in favor of some of the major social reforms considered by Congress, the Congress is of a mind to disregard public opinion and move forward to enact legislation which will bring to socialists the control they desire over the private practice of medicine and other segments of our society. We have seen demonstrated on many occasions since medicine's fateful day of November 3, that Congress will do what it feels is politically expedient and not always what the people may conclude is in their best interests. This is substantiated by surveys which have been taken throughout the country and which demonstrate that the American people generally favor medicine's approach to the financing of health care for the needy—Eldercare—and not the socialists' scheme—Medicare.

Under these circumstances, it seems to me we have reached a point in history when physicians must stand together and be counted. Either we submit to the control that accompanies the programs that are in the making, or we stand together and make our position clear that since certain third parties are assuming authority for providing payments for health care, they must also assume the same responsibility.

As mentioned in the presidential address of Dr. Edwards last year, we have been too inclined to talk to our friends and attempt to curry favor with our enemies. This won't work! We must identify our enemies and expose them. We must state to all who are interested that our services are not to be bargained for except on our terms—our terms being that where a third party assumes responsibility for payment, it shall pay on the basis of usual and customary fees determined fair, reasonable and customary at the community or county level.

Let me emphasize that in the provision of medical services to our private patients where third parties are not involved, it is up to each individual physician to determine what his charges shall be—that is strictly a matter of personal and private relations between the physician and his patient. I strongly urge this House of Delegates to reaffirm its belief in the usual-and-customary-fee concept and that it direct the officers of the Iowa Medical Society to enter into negotiations with all third parties on this basis, emphasizing the role of the county medical society in determining fair, usual, reasonable and customary fees.

The usual-and-customary-fee concept pertains to a service, a circumstance, the individual physician and his own standard of excellence. It is a principle—not a device.

O. D. WOLFE, M.D., *Chairman*

Resolutions

DUBUQUE COUNTY MEDICAL SOCIETY

NO. 1. APPROVAL OF PROPOSED BUDGET FOR STATE HEALTH DEPARTMENT

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Iowa Medical Society go on record as supporting Acting Commissioner Doctor Arthur P. Long's proposed budget for the biennium 1965-67 for the State Department of Health.

DUBUQUE COUNTY MEDICAL SOCIETY

NO. 2. COMPOSITION AND FUNCTION OF STATE BOARD OF HEALTH

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Iowa Medical Society go on record as approving Acting Commissioner Doctor Arthur P. Long's recommendation for revising the composition and function of the State Board of Health.

DUBUQUE COUNTY MEDICAL SOCIETY

NO. 3. LOCAL TAXATION FOR PUBLIC HEALTH PROGRAMS

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Iowa Medical Society endorse and actively promote Acting Commissioner Doctor Arthur P. Long's recommendations regarding legislation that would permit local taxation on a millage basis to implement an adequate City and County Public Health program.

POLK COUNTY MEDICAL SOCIETY

NO. 4. SUPPORT FOR ACCIDENT PREVENTION PROGRAMS

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, There are an increasing number of accidents on the highways, on the streets and in the home, therefore be it
Resolved, That the Iowa Medical Society encourage and give support to programs designed to prevent accidents.

POLK COUNTY MEDICAL SOCIETY

NO. 5. STATE-WIDE BLUE CROSS-BLUE SHIELD GROUP FOR PHYSICIANS' EMPLOYEES

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The increasing cost of Blue Cross is becoming a budgetary problem for more and more physicians' employees, and
WHEREAS, A larger group normally would eliminate the fluctuation in premium payments from year to year, and
WHEREAS, Optional deductions and benefits can now be made available within a group, therefore be it
Resolved, That the Iowa Medical Society explore the possibility of establishing a state-wide Blue Cross-Blue Shield Group for coverage of physicians' employees and staff members of the Iowa Medical Society, Polk County Medical Society and other county societies within the State.

POLK COUNTY MEDICAL SOCIETY

NO. 6. MILEAGE UNDER THE WELFARE PROGRAM

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Figuring mileage is cumbersome in larger urban centers, and
WHEREAS, Physicians often drive many miles within city limits to make a house call on a patient, and
WHEREAS, Mileage does not apply in larger cities, and certainly does not reflect the time and effort expended by the doctor in the care of these patients, therefore be it
Resolved, That the unit fee index used in the welfare programs, in the State of Iowa, regarding mileage be amended to delete mileage entirely in cities over 50,000 in popu-

lation, and be changed to 2½ units allowance for all home visits. (The unit fee is $3.00.)

NOTE: In other words, the code number 0007-Home visit, first call be amended from 2 units to 2½ units, and the code number 0008-Home visit subsequent be deleted entirely.

POLK COUNTY MEDICAL SOCIETY

NO. 7. AREA MEDICAL PLANNING COMMITTEES

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, At the recent Miami meeting, the AMA House of Delegates urged formation of county and state regional planning committees, and

WHEREAS, It further urged prompt organization of these committees to forestall the organization of such committees by state governments; therefore be it

Resolved, That the Iowa Medical Society, with prudent haste, appoint a committee to effect organization of an Iowa Medical planning committee and provide for its fiscal expenses. This should be patterned after the existing voluntary plan found in California.

POTTAWATTAMIE COUNTY MEDICAL SOCIETY

NO. 8. COMPULSORY IMMUNIZATION OF CHILDREN

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, It is universally agreed that immunization of children for diphtheria, tetanus, pertussis, smallpox and polio is desirable and essential for the health not only of the individual child but for the community's health as well, and

WHEREAS, The lack of immunization of some children is caused by apathy or unawareness of the need, or by the indifference of the parents rather than by economic difficulties; therefore be it

Resolved, That the Iowa Medical Society press for compulsory immunization of all children prior to entry into school, and compulsory periodic immunizations at such intervals as are deemed necessary during the years of school attendance, the age at which this compulsory program shall terminate to be determined at the state level.

BLACK HAWK COUNTY MEDICAL SOCIETY

NO. 9. BILLING FOR IPPL DUES

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That *annual voluntary* dues for membership in Iowa Physician's Political League be billed twice yearly to all members of the Iowa Medical Society by the State Medical Society office and/or by the constituent county societies at the time of billing for regular IMS dues.

SCOTT COUNTY MEDICAL SOCIETY

NO. 10. PHYSICIAN-HOSPITAL CONTRACT ARRANGEMENTS

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Certain medical services are included as hospital services in pending federal legislation; and

WHEREAS, These medical services have been included as hospital services because these specialties have traditionally had various types of contractual arrangements with hospitals, with the hospital acting as the billing and collecting agent suggesting to the public and insurance companies alike that these medical services are indeed hospital services; and

WHEREAS, These contractual arrangements have usually been on some basis other than fee-for-service; and

WHEREAS, These arrangements have tended to produce a closed staff policy in these departments, when other departments of the hospital staff are not closed; and

WHEREAS, The enactment of federal legislation which includes these medical services as hospital services will ultimately lead to the inclusion of all physician services for patients admitted as inpatients or outpatients to the hospital; therefore be it

Resolved, That the Iowa Medical Society, through its county medical societies, direct that:

a. Any and all contractual arrangements of physicians with hospitals be on a "fee-for-service" basis.

b. Where a fee is charged for a service, this fee shall be billed and collected by the physician charging the fee.

c. No contractual arrangement shall contain a protective covenant; therefore be it further

Resolved, That, through the proper committees, the Iowa Medical Society recommend necessary changes in Blue Cross-Blue Shield and other insurance company contracts to assure proper billing and collecting procedures for professional fees, and for hospital costs which are interpreted to mean the use of the facilities of the hospital by the patient.

BOONE COUNTY MEDICAL SOCIETY

NO. 11. USUAL AND CUSTOMARY FEES IN STATE VENDOR PROGRAMS

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Boone County and other counties are still not being paid their usual and customary fees under the MAA program, and

WHEREAS, The Iowa Medical Society has recently completed a survey of fees in all the counties, and

WHEREAS, There has been no revision of fees on the vendor payments made on the OAA and ADC programs since their inception in 1959 or earlier, and

WHEREAS, All fees should be on the same usual and customary fee basis for clarity; therefore be it

Resolved, That the committee set up by the Iowa Medical Society to negotiate with the State Board of Welfare be advised to put forth every effort as soon as possible to have the usual and customary fees put into effect on the MAA program, using the new fee survey, and be it further

Resolved, That the committee negotiate a new system of payments under the OAA and ADC programs, on a usual and customary fee basis or a percentage thereof if full fees are unobtainable.

WOODBURY COUNTY MEDICAL SOCIETY

NO. 12. BLUE SHIELD-BLUE CHIP REVISIONS

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, In the past 20 years individual and family incomes have increased markedly in the United States and in Iowa, so that family-income limits for full-service benefits under Blue Shield have covered increasingly smaller percentages of the population, from time to time; and

WHEREAS, It was considered desirable both from the standpoint of the people covered and from the standpoint of the public relations of the medical profession to have a large proportion of the population eligible for the full-service benefits under Blue Shield, and the Iowa Medical Society instructed Blue Shield to establish the "Blue Chip" policy, providing full service benefits for the entire population regardless of family income; and

WHEREAS, Administrative provisions have rendered the "Blue Chip" policy distasteful to many practicing physicians in the State of Iowa, with the consequence that a large number of complaints have been sent to the Blue Shield office and a large number of resignations from the roster of participating physicians have occurred; therefore be it

Resolved, That the "Blue Chip" policy be amended to provide that the "full service" provision shall not apply to families or individuals having incomes in excess of $15,000 per annum, a level at which "Blue Chip" would provide full-service coverage to 90 per cent of the population in Iowa at the present time; and therefore be it

Resolved, That the Woodbury Medical Society transmit this resolution to the Iowa Medical Society for presentation to the 1965 House of Delegates.

WOODBURY COUNTY MEDICAL SOCIETY

NO. 13. INCOME REPORTS—INTERNAL REVENUE SERVICE

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, It has become necessary under existing federal income tax regulations and laws for insurance companies and other corporate entities to report payments to physicians to the Internal Revenue Service for the use of automated income tax auditing; and,

WHEREAS, Payments to an individual physician in such instances are ordinarily treated as income to a partnership, when the physician practices as a member of a partnership, rather than to his individual account; therefore be it

Resolved, That it not be considered unethical or improper for insurance companies or other corporations to issue checks to a medical partnership when this is requested, and to report this payment to the Department of Internal Revenue in the name of the partnership; and be it further

Resolved, That this resolution be presented to the Iowa Medical Society and, if adopted, to the American Medical Association.

WEBSTER COUNTY MEDICAL SOCIETY

NO. 14. INSURANCE REPORTING FORMS

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Iowa Medical Society implement the following proposals:

I. Simplify and abbreviate the standard information form for medical and hospital insurance companies, so as to provide only basic information regarding name, diagnosis, services provided, disability, and charges.

II. Recommend that Society members provide only a single completed and signed copy of this form to any company involved in underwriting medical expenses for a patient, with the understanding that companies desiring more than this information may be referred to the hospital records, and that companies desiring more than one copy shall be required to make their own duplicates from the single original provided by the physician's office.

III. Provide an even more abbreviated diagnosis and charge slip which can be utilized by member physicians for those patients who seek insurance coverage for minor expenses, as for example, those for which the professional fee is not more than 3 units in the Relative Value Fee Index. Such a form might be limited to the naming of the service provided, the charge made and the date the service is rendered.

IV. Recommend that member physicians make a reasonable charge for clerical work and professional time involved in completing and signing forms for patients when it develops that services under consideration are not actually covered by insurance.

WEBSTER COUNTY MEDICAL SOCIETY

NO. 15. AMENDMENTS—IOWA MEDICAL EXAMINERS ACT

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Medical Examiners Act enacted by the last legislature with the official approval of the Iowa Medical Society is operating in a generally satisfactory manner, and

WHEREAS, Certain deficiencies have become apparent in its early period of operation, now be it

Resolved, That the Iowa Medical Society request that the Iowa Legislature consider amending the law to require that in the case of traffic deaths or homicides the costs of the medical examiner's work be charged against the county wherein the accident or homicide occurs if that should be different from the county in which death occurs, or wherein the examination is carried out.

WEBSTER COUNTY MEDICAL SOCIETY

NO. 16. USUAL AND CUSTOMARY FEES—GOVERNMENTAL PROGRAMS

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, In the past many programs involving medical and remedial care as, for example, the Old Age Assistance program, Aid to Dependent Children program, Aid to the Blind program have been negotiated by the Iowa Medical Society and component societies at a reduced fee schedule, and

WHEREAS, The payment for services under the Medical Assistance to the Aged program in Iowa (Kerr-Mills) was negotiated on a fee for service basis encompassing the usual and customary fees of a physician; therefore be it

Resolved, That in all future governmental negotiations by the Iowa Medical Society and component societies for payment for services to physicians that the concept of the usual and customary fees be employed; and be it further

Resolved, That the fees may be discounted at no greater a percentage reduction than the percentage reduction accepted by other vendors participating in the governmental program.

WEBSTER COUNTY MEDICAL SOCIETY

NO. 17. ENDORSEMENT OF DOCTORS' ELDERCARE PROGRAM

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The President of the American Medical Association has proposed a progressive and desirable national plan to finance the health care of the aged; and

WHEREAS, This Doctors' Eldercare Program provides federal-state financing of comprehensive health care for those needing assistance with simplified provisions for obtaining eligibility for care and state health department administration; and

WHEREAS, While physicians and the American Medical Association will primarily strive for acceptance of this program, it yet may be necessary to attempt to evolve the best legislation possible in this Congress; and

WHEREAS, This may entail amendment of H.R. 1 and S. 1, the King-Anderson Bill; and

WHEREAS, A vitally necessary amendment to the King-Anderson Bill is one removing those physician's professional services now included (radiology, pathology, anesthesiology and physiatry); and

WHEREAS, Such deletions now will eliminate a precedent for inclusion of further physicians' professional services at a later date; and

WHEREAS, Such exclusion of physicians' professional services will significantly decrease the cost of the King-Anderson Bill which provides benefits to all regardless of need; and

WHEREAS, These physicians' professional services can be readily included in an expanded Kerr-Mills program, and/or in the Doctors' Eldercare program; therefore be it

Resolved, That the House of Delegates of Iowa Medical Society enthusiastically endorses and supports the Doctors' Eldercare Program; and be it further

Resolved, That the House of Delegates requests the Board of Trustees and the Committee on Legislation to make a maximum effort to delete physicians' professional services from H.R. 1 and S. 1, or any other hospitalization benefits bill introduced into Congress.

WEBSTER COUNTY MEDICAL SOCIETY

NO. 18. PHYSICIAN-HOSPITAL CONTRACT ARRANGEMENTS

(Referred to the Reference Committee on Legislation and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Certain medical services are included as hospital services in pending federal legislation; and

WHEREAS, These medical services have been included as hospital services because these specialties have traditionally had various types of contractual arrangements with hospitals, with the hospital acting as the billing and collecting agent suggesting to the public and insurance companies alike that these medical services are indeed hospital services; and

WHEREAS, These contractual arrangements have usually been on some basis other than fee-for-service; and

WHEREAS, These arrangements have tended to produce a closed-staff policy in these departments, when other departments of the hospital staff are not closed; and

WHEREAS, The enactment of federal legislation which includes these medical services as hospital services will ultimately lead to the inclusion of all physician services for patients admitted as inpatients or outpatients to the hospital; therefore be it

Resolved, That the Iowa Medical Society, through its county medical societies, direct that:

a. Contractual arrangements of radiologists, pathologists, anesthesiologists and physiatrists shall be similar to those of other members of the medical staff of the hospital.

b. Any and all contractual arrangements of physicians with hospitals be on a "fee-for-service" basis.

c. Where a fee is charged for a service, this fee shall be billed and collected by the physician charging the fee.

d. No contractual arrangement shall contain a protective covenant; and be it further

Resolved, That, through the proper committees, the Iowa Medical Society recommend necessary changes in Blue Cross-Blue Shield and other insurance company contracts

to assure proper billing and collecting procedures for both medical and hospital services.

POCAHONTAS COUNTY MEDICAL SOCIETY

NO. 19. SCHEDULING OF IOWA MEDICAL SOCIETY ANNUAL MEETING

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Many of the members of the Iowa Medical Society are also members of the American Academy of General Practice and are interested in attending the national meetings of the said organization; and

WHEREAS, Meetings held during Holy Week are repugnant to those who would like to strictly observe this religious occasion; therefore be it

Resolved, That the Iowa Medical Society Annual State Meeting be scheduled at some time other than such a time as would conflict with the national meeting of the American Academy of General Practice and with Holy Week.

SCOTT COUNTY MEDICAL SOCIETY

NO. 20. BLUE SHIELD-BLUE CHIP CONTRACT

(Referred to the Reference Committee on Blue Shield for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, A Blue Chip full service contract issued by Iowa Medical Service was originally intended and authorized by the House of Delegates of the Iowa Medical Society to provide payment for physicians' services based on usual, customary, and reasonable fees; and

WHEREAS, Interpretation of the "usual, customary, and reasonable fee" concept has, under the Blue Chip policy, aroused considerable controversy, confusion, and dissatisfaction among Iowa Medical Service participating physicians, and patients; and

WHEREAS, Certain commercial insurance companies have undertaken to provide payment for full service coverage without the restrictive and controversial provisions of the Blue Chip plan; therefore be it

Resolved, That

1. Blue Chip policies not be renewed in their present form; and
2. Future Blue Chip policies provide full service coverage, based on the usual, customary, and reasonable fee concept, for only those policyholders whose annual income is $7500 or less; and
3. Policyholders whose income is more than $7500 will receive benefits based on the usual, customary, and reasonable fee concept except that these payments will be considered as indemnity rather than full service payment; and
4. County review committees, made up of participating physicians and acting as agents for Blue Shield, shall make binding dispositions of disputed allowances under the usual, customary, and reasonable fee concept.

LIFE AND ASSOCIATE MEMBERSHIPS

LIFE MEMBERSHIP RECOMMENDED ON THE BASIS OF 50 YEARS' PRACTICE AND 30 YEARS' MEMBERSHIP

County	*Name*
Allamakee	John W. Thornton, Lansing
Des Moines	D. Ferrel Huston, Burlington
Pocahontas	William F. Brinkman, Pocahontas
Polk	Henry E. Kleinberg, Des Moines
	Eugene H. McCaffrey, Des Moines
	George C. McCreight, Des Moines
Scott	Charles E. Block, Davenport
	George Braunlich, Davenport
Woodbury	John C. Henkin, Sioux City

ASSOCIATE MEMBERSHIPS RECOMMENDED ON THE BASIS OF RETIREMENT OF INCAPACITATION

County	*Name*
Appanoose	C. F. Brummitt, Centerville
Cerro Gordo	R. W. Peterson, Clear Lake
Dubuque	William J. Kelly, Dubuque
Polk	Clyde R. Bradford, Des Moines

The physicians nominated for each of these membership categories were then approved unanimously.

The Speaker then announced the meeting places for the various reference committees and said that they would convene at 2:30 that afternoon. Delegates were informed that the House of Delegates would convene Wednesday morning, April 14, at 8:00 a.m. in the Grand Ballroom of the Savery Hotel. They were asked to report promptly. The House adjourned at 12:40 p.m.

WEDNESDAY SESSION, APRIL 14, 1965

The Wednesday session of the House of Delegates was called to order at 8:20 a.m. The House approved the taking of attendance by registration cards. There were 94 delegates, 11 voting alternates and 15 ex-officio members present.

County	*Delegate*	*Alternate*
Adair	A. J. Gantz	
Adams	C. L. Bain	
Allamakee		
Appanoose	E. A. Larsen	
Audubon		
Benton		
Black Hawk	A. M. Dolan	
	C. D. Ellyson	
	F. G. Loomis	
	L. L. Zager	
		G. W. Heine
Boone	E. E. Linder	
Bremer	V. H. Carstensen	
Buchanan	P. J. Leehey	
Buena Vista		
Butler		
Calhoun	C. R. Wilson	
Carroll	H. L. Skinner	
Cass		
Cedar		
Cerro Gordo	J. F. Paulson	
	L. J. Kirkham	
	W. N. Hanson	
Cherokee		
Chickasaw		
Clarke	G. I. Armitage	
Clay		
Clayton		
Clinton	M. E. Barrent	
	W. H. Ash	
Crawford		
Dallas-Guthrie		E. E. Lister
	R. J. Peterson	
Davis	J. R. Scheibe	
Decatur-Ringgold	E. E. Gamet	
	D. E. Mitchell	
Delaware		
Des Moines	J. L. Saar	
	J. F. Foss	
Dickinson	E. L. Johnson	
Dubuque		
	K. K. Hazlet	
	D. A. Howell	
Emmet	H. A. Lindholm	
Fayette	R. S. Jaggard	
Floyd		D. L. Trefz
Franklin	R. E. Munns	
Fremont		
Greene		
Grundy		
Hamilton	G. A. Paschal	
Hancock-Winnebago	L. R. Fuller	
Hardin	John Sear	
Harrison	J. W. Barnes	
Henry	H. M. Readinger	
Howard		
Humbolt		
Ida		
Iowa		
Jackson		
Jasper	J. W. Billingsley	
Jefferson	K. H. Strong	
Johnson		
	C. P. Goplerud	
	G. W. Howe	
	K. J. Judiesch	
	J. M. Layton	
		C. E. Radcliffe
	Jack Moyers	
	C. E. Schrock	
		G. M. Wyatt
Jones	L. D. Caraway	
Keokuk		
Kossuth	R. E. Jongewaard	
Lee	L. C. Pumphrey	
Linn	J. J. Redmond	
	R. M. Chapman	
	J. J. Keith	
	H. R. Hirleman	
	W. J. Robb	
Louisa		
Lucas		
Lyon		

County	*Delegate*	*Alternate*
Madison	J. E. Evans	
Mahaska	G. W. Bennett	
Marion		
Marshall	L. O. Goodman R. G. Robinson	
Mills		
Mitchell		
Monona		
Monroe	H. J. Richter	
Montgomery	Oscar Alden	
Muscatine		
O'Brien	J. C. Peterson	
Osceola		
Page	W. G. Kuehn	
Palo Alto		
Plymouth	J. P. Trotzig	
Pocahontas	C. J. Smith	
Polk	N. W. Irving, Jr. W. J. Morrissey J. G. Thomsen W. R. Hornaday, Jr. R. W. Anderson R. B. Stickler A. N. Smith J. H. Kelley	J. E. Gustafson R. J. Reed J. W. Green J. T. McMillan C. A. Trueblood
Pottawattamie	F. E. Marsh, Jr. I. J. Hanssmann	
Poweshiek		
Sac		
Scott	Erling Larson J. F. Bishop W. S. Pheteplace	
Shelby	G. E. Larson	
Sioux		
Story	G. E. Montgomery R. H. Heise	
Tama	A. J. Havlik	
Union-Taylor	D. L. York R. W. Boulden	
Van Buren		
Wapello	K. E. Lister	W. E. Herrick
Warren	Amalgamated with Polk County	
Washington	E. D. Miller	
Wayne	C. N. Hyatt	
Webster	H. H. Kersten L. J. O'Brien	
Winneshiek		
Woodbury	A. H. Kelly W. M. Krigsten H. E. Rudersdorf J. P. Tiedeman P. M. Cmeyla	
Worth	B. H. Osten	
Wright	C. P. Hawkins	

LIAISON DELEGATES

R. C. Larimer
R. H. Kuhl

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF THE HOUSE

O. D. Wolfe
R. F. Birge
C. W. Seibert
J. L. Powers
C. N. Cooper
H. J. Smith
P. M. Kersten
G. H. Scanlon
F. G. Ober
S. P. Leinbach
J. H. Sunderbruch
R. L. Wicks
L. W. Swanson
E. M. Smith
C. V. Edwards, Sr.

Dr. Birge read the minutes of the April 11 meeting of the House of Delegates, and asked that the report of the Necrology Committee be amended to include Dr. H. F. Hosford, of Burlington, whose name had inadvertently been omitted. The Speaker asked the House to rise for a moment in memory of Dr. Hosford. Subsequently the House approved the Minutes.

The election of officers followed, and the following physicians were chosen:

President-elect	S. P. Leinbach, M.D., Belmond
Vice-president	J. M. Rhodes, M.D., Pocahontas
Trustee	K. E. Lister, M.D., Ottumwa
Speaker of the House	P. M. Kersten, M.D., Fort Dodge
Vice-Speaker of the House	J. L. Powers, M.D., Estherville
AMA Delegate	E. M. Smith, M.D., Des Moines
Alternate AMA Delegate	C. E. Radcliffe, M.D., Iowa City
Councilor, District 2	J. F. Paulson, M.D., Mason City
Councilor, District 7	L. D. Caraway, M.D., Monticello
Councilor, District 8	J. F. Bishop, M.D., Davenport
Councilor, District 9	E. A. Larsen, M.D., Centerville
Blue Shield Liaison Delegates to the IMS	C. N. Hyatt, M.D., Corydon R. C. Larimer, M.D., Sioux City

Dr. J. M. Stickney, president of the Minnesota State Medical Society, was then introduced, and he addressed the House briefly. Mr. William Alexander, of Omaha, regional representative of the American Medical Political Action Committee, was also presented to the House.

Dr. Birge, as Secretary of the Society, next presented an informational report on the status of the work of the Iowa Medical Society/Blue Shield Liaison Committee in selecting Candidates to stand for election to the Board of Directors of Blue Shield.

Reference Committee Reports

The following reference committee reports were approved by the House of Delegates.

MISCELLANEOUS BUSINESS

The Reference Committee on Miscellaneous Business met in open session at 2:30 p.m., April 11, 1965. Interested members of the Society presented background material to the Committee so that deliberate consideration and discussion could be given to each referred item. The first item considered was Resolution No. 7.

RESOLUTION NO. 7—INTRODUCED BY POLK COUNTY MEDICAL SOCIETY ON AREA MEDICAL PLANNING COMMITTEES

In view of the expected passage of the greatly expanded "Medicare" bill and the tendency of various governmental and non-medical groups to establish compulsory Area Health Facilities Planning, and since the American Medical Association and the Iowa Medical Society have previously recorded their strong support of voluntary Area Health Planning and are equally strongly opposed to compulsory planning, there is a definite and urgent need for prompt action. Therefore, your Reference Committee recommends that the Iowa Medical Society appoint an ad hoc study committee to promote intelligent coordination amongst various community health services pointing toward the formation of an Area Health Facilities Planning group.

This committee should determine the goals of Area Health Facilities Planning and determine the composition of a governing board. The cooperation and support of the Iowa Hospital Advisory Council, representatives of various health facilities and organizations as well as interested lay groups are to be sought under the leadership of the Iowa Medical Society. The IMS ad hoc study committee should explore various voluntary plans and recommend to the Iowa Medical Society a definite program for implementation in this field. It is recommended that a report be available within three months.

Mr. Speaker, I move adoption of this portion of the report.

RESOLUTION NO. 13—INTRODUCED BY THE WOODBURY COUNTY MEDICAL SOCIETY ON INCOME REPORTS—INTERNAL REVENUE SERVICE

Because legal counsel, after investigating the matter with the Judicial Council of the AMA, states that it is perfectly ethical for a medical partnership to receive payments in the partnership name from insurance companies, corporations or patients, the Committee recommends that no action be taken on this resolution.

Mr. Speaker, I move adoption of this portion of the report.

RESOLUTION NO. 5—INTRODUCED BY POLK COUNTY MEDICAL SOCIETY ON STATE-WIDE BLUE CROSS-BLUE SHIELD GROUP FOR PHYSICIANS' EMPLOYEES

Your Reference Committee agrees with the essence of this resolution and wishes to recommend that the IMS Committee on Group Insurance explore the possibility of establishing a state-wide Blue Cross-Blue Shield and/or commercial health insurance group for coverage of physicians' employees and staff members of the IMS, Polk County Medical Society and other component societies, and report its recommendations to the IMS Executive Council or 1966 House of Delegates for further action and/or implementation.

Mr. Speaker, I move adoption of this portion of the report.

RESOLUTION NO. 4—INTRODUCED BY THE POLK COUNTY MEDICAL SOCIETY ON SUPPORT FOR ACCIDENT PREVENTION PROGRAMS

Your Reference Committee and those physicians testifying before it, are certainly in agreement with the sense of this resolution. Your Reference Committee, however, wishes to stress the fact that the IMS for many years has encouraged and given support to various educational programs designed to prevent accidents. Officials of the Society and various committees have assured us there is every intention to continue to give this encouragement and support. An examination of the records of the IMS reveals such programs and legislation as advocated by the Committees on Maternal and Child Health, Industrial Health, Rural Health, Safe Transportation, Interprofessional Activities, and Health Education. In fact, state-wide programs such as one on "Automotive Safety" presented during the 1961 IMS Annual Meeting and a state-wide meeting on "Athletic Injuries" are fine examples. In view of this, we wish to commend the IMS officers, committees, physicians, staff and lay groups for their effort along these lines and urge the continuance of these programs.

In connection with the above, the Committee on Safe Transportation deserves special commendation for its efforts to prolong the lives of Iowa citizens. It has won the respect and plaudits of several governmental and lay groups.

Mr. Speaker, I move adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE SUBCOMMITTEE ON SAFE TRANSPORTATION

This Committee approves in principle the Supplemental Report of the Subcommittee on Safe Transportation. The Subcommittee is charged with providing a detailed program which is to be presented to the Executive Council for approval. The Subcommittee is to provide a report of recommendations and implementation at the next meeting of the House of Delegates.

Mr. Speaker, I move adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE COMMITTEE ON STATE DEPARTMENTS

Your Reference Committee agrees in principle with the Supplemental Report of the Committee on State Departments and specifically recommends adoption of the two proposals as amended:

"Proposal: Physicians utilizing the services of the State Hygienic Laboratory in Tuberculosis studies be notified that at least three sputum specimens should be submitted on each patient and should understand that only isolated cultures will be inoculated into guinea pigs as an aid in species identification and virulence studies.

"Proposal: That physicians utilizing the services of the State Hygienic Laboratory in the surveillance of Salmonella infections be encouraged to submit stool specimens for bacteriological examination rather than blood for agglutination studies."

Mr. Speaker, I move adoption of this portion of the report.

Mr. Speaker, I move adoption of this report as a whole.

In conclusion I wish to express my appreciation to the members of this Reference Committee for their diligence and to the physicians who provided this Committee with background information.

Respectfully submitted,
L. J. O'BRIEN, M.D., *Chairman*
L. J. KIRKHAM, M.D.
D. A. HOWELL, M.D.
A. H. KELLEY, M.D.
H. H. KERSTEN, M.D.

LEGISLATION AND MEDICAL SERVICE

The Reference Committee on Legislation and Medical Service conducted an open hearing Sunday, April 11, 1965, following the first session of the IMS House of Delegates. All Society members in attendance at this meeting were invited to express their views on the supplemental reports and resolutions assigned to the Committee.

Equipped with opinions presented at the open hearing and other resource material, the Committee subsequently met in Executive Session to consider the matters placed before it. The Committee invited comments from additional persons during its private deliberations.

Submitted herewith is an item-by-item report of the Committee's conclusions:

SUPPLEMENTAL REPORT OF THE COMMITTEE ON LEGISLATION

The members of your Reference Committee would sound a somber note similar to that expressed by the Committee on Legislation in its reference to national legislative indications. Even so, the Committee strongly believes the physicians of Iowa should retain their posture of conviction. A courageous spirit must continue to prevail and a concerted and valiant effort must be made in the weeks ahead.

Your Reference Committee supports the recommendation to continue the annual trip by IMS officers to Washington, D. C., to present the position of the medical profession to the Iowa congressional delegation.

Mr. Speaker, I move the adoption of this portion of the report.

In the area of state legislation, your Reference Committee took note of the numerous and divergent health measures which have been given attention by the IMS Legislative Committee during the 61st Iowa General Assembly. Several of these items are referred to in subsequent sections of this report. The Reference Committee recommends that the House of Delegates endorse the medical profession's position regarding

mandatory testing of newborn infants for phenylketonuria (PKU). The medical profession favors an educational program for the public, but opposes mandatory legislation.

The Reference Committee would like to commend Dr. J. H. Kelley, of Des Moines, and the other members of the Committee on Legislation for their noteworthy efforts in establishing an effective rapport with a changed state legislature.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE USUAL & CUSTOMARY FEE SURVEY COMMITTEE

This report reviews the ground already covered by the Fee Survey Committee in its effort to provide the Society with a range of usual and customary fees on a county by county basis. Your Reference Committee, in concert with several spokesmen at the open hearing, wishes to applaud the Usual and Customary Fee Survey Committee for its effective work to date. It is further recommended that all deliberate speed be applied in completing the final phase of the study so that its results may be used in all future negotiations with third parties.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE SUBCOMMITTEE ON NERVOUS & MENTAL DISEASES

On the basis of information contained in this supplemental report and in the absence of any testimony at the open hearing, your Reference Committee concurs with the Subcommittee on Nervous and Mental Diseases and recommends the Iowa Medical Society hold to the belief that: 1) existing community mental health clinics in Iowa should retain their separate identity and remain apart in physical structure from any inpatient facility; and 2) any new clinic which may be constructed in the future should be built in keeping with the community mental health plan developed on the local level.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE COMMITTEE ON PUBLIC RELATIONS

The recent and energetic efforts of the Iowa Medical Society to tell the people of the state about the principal factors in the health care for the aged issue are summarized in this report. The efforts of those who planned and executed this information program were considerable. They deserve commendation. Particular credit is due the county medical societies who on short notice underwrote the cost of advertising space in newspapers within their counties. In addition, many county societies carried out extensive mailings, participated in radio and television programs, and other similar activities. Based on observations in this report, your Reference Committee concludes this program had the desired effect on the general public of Iowa.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE COMMITTEE ON BLOOD BANKING

The comprehensiveness of this report speaks well for the Committee under whose direction it was prepared. Your Reference Committee concurs that the principles embodied in S. 1353 of the 89th Congress represent sound legislation and recommends to the House of Delegates that the Iowa Medical Society support this measure. The Reference Committee recommends the adoption of the resolution as outlined in the supplemental report, and it requests that word of this action be transmitted to the American Medical Association and to the members of the Congress by whatever means seem prudent.

Mr. Speaker, I move the adoption of this portion of the report.

It appears from the report and comments brought out at the open hearing that blood banking will continue to pose problems for some time and these problems may be compounded as the supplying of tissue and organs enters the picture. Your Reference Committee recommends the Committee on Blood Banking devise and implement a program for transmitting pertinent information on this subject to the constituent county medical societies. It further recommends that county societies be advised to consult the IMS on any matters related to the need for improved blood banking services or the establishment of new regional blood banks.

Mr. Speaker, I move the adoption of this portion of the report.

Lastly, the Reference Committee acknowledges the contributions of the Iowa Association of Blood Banks to blood banking in Iowa and urges physicians in the state to stimulate all hospitals, large and small, to avail themselves of the services and information provided by this organization.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE MEDICAL-HOSPITAL STATISTICAL COMMITTEE

Your Reference Committee is impressed with the potential of this pilot utilization study which the Medical-Hospital Statistical Committee expects to launch in July. The Reference Committee wishes to underscore the importance of this work being done by knowledgeable persons within the health field, rather than by outside government representatives.

Mr. Speaker, I move the adoption of this portion of the report.

SUPPLEMENTAL REPORT OF THE USUAL & CUSTOMARY FEE FACT-FINDING COMMITTEE

Your Reference Committee wishes to laud the efforts of Dr. Otis D. Wolfe and other officers of the Society for their work in developing lines of communication with private insurance carriers and other third parties regarding application of the usual and customary fee concept. The Reference Committee strongly urges the House of Delegates to reaffirm its belief in the usual and customary fee concept and it directs the officers of the Iowa Medical Society to enter into negotiations with *all* third parties on this basis, emphasizing the role of the county medical society in determining fair, usual, reasonable and customary fees.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 1 Introduced by Dubuque County Medical Society on the Proposed Budget for the State Health Department. Your Reference Committee recommends the Society support legislative measures which will provide the State Health Department with adequate appropriations to carry out an effective program.

The Reference Committee further recommends the IMS and the Health Department enter into a program of education to inform the membership on matters relating to public health in the state.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 2 Introduced by Dubuque County Medical Society on the Composition and Function of the State Board of Health. On this matter, the Reference Committee wishes to take a position parallel to that expressed by the Committee on Legislation which is: that because of the profession's interest in the creation of a policymaking Board which would be of significant service to the state, the Iowa Medical Society should not actively oppose House File 242.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 3 Introduced by Dubuque County Medical Society on Local Taxation for Public Health Programs. Again on this measure, the Reference Committee draws on the experience of the Committee on Legislation in recommending the Iowa Medical Society continue to support the principle that counties should be permitted to establish or expand local public health services. The matter of county taxation for this purpose, while subject to debate, seems allowable on a permissive basis.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 6 Introduced by Polk County Medical Society on Mileage Under the Welfare Program. The Reference Committee is sympathetic with physicians in the major urban areas of the state who receive inequitable treatment insofar as mileage allowances for house calls are concerned. By the same token, the Committee is cognizant of the costly and cumbersome mechanics involved in altering established unit allowances in the state welfare programs. Nonetheless, the Committee recommends adoption of this Resolution from Polk County.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 8 Introduced by Pottawattamie County Medical Society on Compulsory Immunization of Children. Your Reference Committee feels that it would be more desirable to direct concerted efforts toward educational programs on voluntary immunization.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 10 Introduced by Scott County Medical Society on Physician-Hospital Contract Arrangements, and Resolution No. 18 Introduced by Webster County Medical Society, Which Essentially Duplicates Resolution No. 10. The Committee listened with interest to considerable testimony on this Resolution. The feeling prevailed within the Committee that contractural arrangements between physicians and the hospitals may be on an individual basis as long as they are compatible with ethics and the law. The Reference Committee feels that because the matter of ethics is involved, its only recourse is to refer these Resolutions to the Judicial Council for further study.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 11 Introduced by Boone County Medical Society on Usual and Customary Fees in State Vendor Programs, and Resolution No. 16 Introduced by Webster County Medical Society, Which Essentially Duplicates Resolution No. 11. The Reference Committee considered these Resolutions together and makes the following recommendations: 1) That the committee or those delegated by the Iowa Medical Society to negotiate with the State Department of Social Welfare be advised to put forth every effort as soon as possible to have the usual and customary fees put into effect in the MAA program, using the new fee survey. 2) The Iowa Medical Society negotiate a new system of payments under the OAA, ADC and other programs on a usual and customary fee basis or a percentage thereof if full fees are unobtainable, and that the fees may be discounted at no greater a percentage reduction than the percentage reduction accepted by other vendors participating in the governmental program. 3) That in all future third party negotiations, the Iowa Medical Society and component societies should adhere to the above principles.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 14 Introduced by Webster County Medical Society on Insurance Reporting Forms. This Resolution was considered and the Committee recommends transmittal to the Committee on Medical Service for further evaluation.

Mr. Speaker, I move the adoption of this portion of the report.

(The Reference Committee's report, as presented to the House of Delegates, approved Resolution No. 15, by the Webster County Medical Society, proposing amendments to the Iowa Medical Examiners Act. The House of Delegates voted to table that section of the Reference Committee's report.)

Resolution No. 17 Introduced by Webster County Medical Society on Endorsement of Doctors' Eldercare Program has been previously alluded to in the Supplemental Report of the Committee on Public Relations, and no action is necessary.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of this report as a whole, as amended.

In conclusion, I wish to express my deep appreciation to the members of this Reference Committee for their patience and devotion to duty. It has been a privilege to serve with such men.

Respectfully submitted,
E. E. LINDER, M.D., *Chairman*
ERLING LARSON, M.D.
L. R. FULLER, M.D.
J. L. GARRED, M.D.
A. J. HAVLIK, M.D.

BLUE SHIELD

Your Reference Committee on Blue Shield was given the responsibility of considering the following items referred to it by the House of Delegates:

1. Supplemental Report "L" of the Board of Trustees and Exhibits I-II-III.
2. Resolution 12, Introduced by Woodbury County Medical Society—Subject: Blue Shield-Blue Chip Revisions.
3. Resolution 20, Introduced by Scott County Medical Society—Subject: Blue Shield-Blue Chip Contract.

Your Reference Committee met in a well-attended,

well-verbalized open session on Sunday afternoon to hear opinions on these items from all interested parties. In addition, comprehensive executive sessions were held with the president of Blue Shield and with the IMS Board of Trustees.

The Reference Committee would like to take this opportunity to thank Mr. Robert Murphy, general counsel of the Wisconsin Medical Society, who gave us a great deal of background information on the usual and customary fee concept, as applied to the "Special Services" Contract of Wisconsin Physicians' Service (Blue Shield).

It is the opinion of the Reference Committee that both the IMS Board of Trustees and the Blue Shield Executive Committee are to be commended on their excellent progress in establishing improved working relationships between the two organizations. Two specific accomplishments should be noted:

1. The approval of the Joint Statement of Intent, which is a direct response to recommendations of the 1964 House of Delegates.

2. A revised version of the Memorandum of Understanding which was originally consummated on September 12, 1956.

These are specific examples of the improved rapport between the two organizations. The above mentioned documents have been approved by the Blue Shield Board of Directors and the IMS Executive Council and therefore require no action by this House of Delegates.

Mr. Speaker, I move the adoption of this portion of the report.

The Committee acknowledges completion of the IMS/Pathology Blue Shield Study Committee report. We encourage continued negotiations by IMS/Blue Shield representatives to improve relations between Pathologists and Blue Shield and to work toward implementing recommendations set forth in the report, e.g., the three items referred to in Supplemental Report "L." This was presented for information only and requires no action at this time by the House of Delegates.

Mr. Speaker, I move adoption of this portion of the report.

Your Reference Committee re-emphasizes the following comments on the subject of the Blue Chip contract:

1. That the usual-and-customary-fee concept is a sound one and should be maintained.

2. That the successful implementation of a usual-and-customary-fee program depends upon the utilization of county and state claims review committees in adjudicating questionable claims, and acceptance in good faith of committee recommendations. Further, that the entire success of the usual-and-customary-fee concept depends upon honoring the decisions of these committees.

3. That the everyday usage of the term "community" refers to a localized area, generally meaning an area encompassing no more than a county, except in instances where there may be only one physician in a county performing a particular service; then, the basis of evaluation could be broadened.

These concepts were included in the report of the IMS Plan & Scope Committee and approved by the 1964 House of Delegates; therefore, no additional action is necessary.

Mr. Speaker, I move adoption of this portion of the report.

The Reference Committee believes it important Blue Shield recognize that one of the Medical Society's major objectives is to promote and implement the usual-and-customary-fee concept with all third parties. We, therefore, recommend the replacement of the Relative Value Index in all its editions with county usual-and-customary-fee ranges as soon as and wherever possible in new and existing Blue Shield contracts.

Mr. Speaker, I move adoption of this portion of the report.

Your Reference Committee further recommends that a joint committee from the IMS Board of Trustees and the Blue Shield Board of Directors be directed to advise the Blue Shield Board to rename, re-evaluate and/or rewrite the Blue Chip contract, and that this contract implement the usual-customary-and-reasonable-fee concept.

Mr. Speaker, I move adoption of this portion of the report, as amended.

Your Reference Committee recommends that the county review committees be utilized and their effectiveness be evaluated during the next year, using as the basis for determining county usual and customary fees, the ranges of fees that will be available from the Iowa Medical Society as a result of the recently completed county fee survey.

Mr. Speaker, I move adoption of this portion of the report.

If it is determined through proper cooperation between Blue Shield, the Iowa Medical Society and county medical societies, that the usual-and-customary-fee program can be made to function in the best interest of all parties, the Reference Committee recommends that consideration be given to introducing an income ceiling, perhaps at $7,500, below which benefits would be provided, based on the usual-and-customary-fee concept, and above which Blue Shield members would be indemnified and physicians could make an additional charge.

Mr. Speaker, I move adoption of this portion of the report.

Information presented in open hearings suggested the necessity for an increase in full service levels to $7,500 in order for Blue Shield to continue participation in the Federal Employees' Program after November 1, 1965. It is the feeling of the Committee that any increase in full service income ceilings will not be acceptable to Iowa physicians unless it is implemented under the usual-and-customary-fee concept. If after study by a joint committee from the IMS Board of Trustees and Blue Shield Board of Directors it is deemed necessary that approval of this type of contract be considered prior to November 1, 1965, a special session of the House of Delegates could be called for this purpose.

Mr. Speaker, I move adoption of this portion of the report.

Your Reference Committee feels that the recommendations of this report cover the proposed intent of Resolutions 12 and 20. We believe that previous experience shows that hasty actions on Blue Shield programs are ill-advised; therefore, this Reference Committee does not believe that it should rewrite the Blue Chip policy. For these reasons we recommend no action be taken on these resolutions.

Mr. Speaker, I move adoption of this portion of the report.

Finally, your Reference Committee is very pleased with the progress that has been made in the relationship between IMS and Blue Shield. However, this Committee feels that the tenor of the physicians in

Iowa is such that this relationship must continue to improve to insure participation of these physicians in Blue Shield.

Mr. Speaker, I move adoption of this portion of the report.

Mr. Speaker, I move adoption of this report as a whole, as amended.

Respectfully submitted,
L. D. CARAWAY, M.D., *Chairman*
C. D. ELLYSON, M.D.
H. L. SKINNER, M.D.
J. E. TYRRELL, M.D.
W. G. KUEHN, M.D.

A 15-minute recess then occurred, and afterward, the past presidents of the IMS who were present were asked to stand and be recognized. Next, following an announcement of the results of the balloting, the president-elect of the IMS, Dr. S. P. Leinbach, was escorted to the rostrum and invited to address the House. His remarks were as follows:

"Of course, I am moved. I accept your decision, and certainly appreciate your confidence in me. I pledge that I will do my best to be the type of president that you desire and that you want. I would hope you would feel free, when my time comes up to be president of the Society, to offer all counsel and advice, because I shall need much. Thank you."

Thereafter, the vice-president-elect, Dr. J. M. Rhodes, was asked to come to the platform for recognition by the House.

ARTICLES OF INCORPORATION AND BY-LAWS

Your Reference Committee on Articles of Incorporation and By-Laws had just one matter to consider—a proposal contained in Supplemental Report "I" of the Board of Trustees, designed to permit the Trustees to grant the title "executive vice-president" to Mr. Donald L. Taylor, and henceforth to give the Trustees full discretion in assigning titles to members of the IMS staff.

The Committee heard the views of the president and the chairman of the IMS Board of Trustees in this regard, and then voted unanimously to recommend the adoption of the changes which the Board of Trustees had proposed, viz.:

"*Resolved,* That the Amended and Substituted Articles of Incorporation of Iowa Medical Society, as amended, be and hereby are amended as follows:

"1. By striking therefrom the whole of the last sentence of Article IV, Section 3 thereof, which reads as follows: The Board of Trustees shall employ a general administrative officer to be known as the Executive Director of the Society, who need not be a physician or a member of the Society.

"2. By striking the whole of the last sentence of the first paragraph of Article IV, Section 14 thereof, which reads as follows:

"The Board of Trustees may employ an Executive Director and assistants for the Society, none of whom need be a physician or member of this Society, and shall fix the salaries and other compensations of the Executive Director and all other persons employed by or for the Society.

and substituting in lieu thereof the following:

"The Board of Trustees shall employ such executive and administrative personnel as it shall from time to time determine. Such personnel need not be physicians or members of the Society. The Board of Trustees shall fix their salaries, other compensation, and other terms of employment, and shall from time to time determine the titles by which such personnel are to be known.

"*Be It Further Resolved,* That the Chairman of the Board of Trustees and the Secretary of Iowa Medical Society be and hereby are authorized to sign, acknowledge, record and publish the foregoing Amendment as the Ninth Amendment to the Amended and Substituted Articles of Incorporation of Iowa Medical Society, and to do any and all other things required by law to execute, complete, and place in lawful effect said Amendment."

Mr. Speaker, I move the adoption of the foregoing proposals.

Mr. Speaker, I move the adoption of this report as a whole.

Respectfully submitted,
JOHN SEAR, M.D., *Chairman*
R. E. JONGEWAARD, M.D.
J. R. SCHEIBE, M.D.
V. H. CARSTENSEN, M.D.
R. W. BURKE, M.D.

REPORTS OF OFFICERS

The Committee met in open session with members of the Board of Trustees, IMS staff, interested delegates and guests. Your Committee considered resolutions No. 9 and No. 19, as well as Supplemental Reports I, J, and K of the Board of Trustees.

Resolution No. 9 (Black Hawk County): This resolution was considered by your Reference Committee, and testimony was heard from Bill Alexander of the American Medical Political Action Committee headquarters in Chicago, regarding the feasibility and desirability of combined billing for voluntary IPPL membership dues and IMS dues. A legal opinion from Mr. Robert Throckmorton, AMA general counsel, indicates that although there are no precedents or clear-cut guidelines, there would be very little likelihood of legal or financial difficulties encountered by this procedure.

Your Reference Committee feels that this resolution as worded does not directly involve the affairs of the State Society; however, your Reference Committee is impressed with the intent of the resolution and therefore suggests to the Board of Trustees that the state organization may include statements for voluntary IPPL membership dues with the statement for Society membership dues and the form of billing be determined by the Board of Trustees.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 19 (Pocahontas County): Your Reference Committee concurs with the feelings expressed in this resolution. Since the American Academy of General Practice meetings will hereafter be held in the fall, no future conflicts should occur in this regard. The unfortunate timing of the 1965 IMS meeting occurred because of limited availability of hotel accommodations during the transition period of relocating the annual meeting from the Auditorium to the Hotel Fort Des Moines. By scheduling the IMS annual meeting dates three years in advance, such a conflict should not again occur. However, your Reference Committee recommends the Board of Trustees select dates for the annual meeting that will fall after Easter.

Mr. Speaker, I move the adoption of this portion of the report.

Supplemental Report "I" of the Board of Trustees: Your Reference Committee endorses the recommendation of the Board of Trustees to change the title of Executive Director, now held by Mr. Donald L. Taylor, to the title of Executive Vice President.

Mr. Speaker, I move the adoption of this portion of the report.

It was noted that the 1964 fall conference for county medical society officers and other representatives was very well attended and was one of the most successful ever held. Some members of your Committee feel this was due to the fact that the meeting was held the Sunday preceding the Iowa Academy of General Prac-

tice meeting; therefore, your Committee recommends that this year's meeting for county society officers and other representatives be scheduled the Sunday preceding the IAGP meeting.

Mr. Speaker, I move the adoption of this portion of the report.

All other sections of Supplemental Report "I" were reviewed and approved.

Mr. Speaker, I move the adoption of this portion of the report.

Supplemental Reports "J" and "K" of the Board of Trustees: Your Reference Committee reviewed the financial picture of the Iowa Medical Society and heard lengthy testimony concerning the financial position of the JOURNAL OF THE IOWA MEDICAL SOCIETY. Deficits have been incurred in publishing the IMS JOURNAL for the past four years (since the Kefauver hearings). Your Reference Committee feels that the overall outlook is improving and that the value of the JOURNAL outweighs its financial liability.

Mr. Speaker, I move the adoption of this portion of the report.

All other sections of Supplemental Reports "J" and "K" were reviewed and approved.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move adoption of this report as a whole.

Respectfully submitted,
J. P. TROTZIG, M.D., *Chairman*
N. W. IRVING, M.D.
W. R. HORNADAY, JR., M.D.
R. M. CHAPMAN, M.D.

Dr. N. W. Irving, Jr., of Des Moines, representing the Polk County Medical Society, extended an invitation for the Iowa Medical Society to hold its annual meeting in Des Moines during the spring of 1967. After noting that the place and time for the 1966 meeting had already been set, the Speaker called for a second to Dr. Irving's motion and asked for a vote. The motion was carried.

The Speaker expressed appreciation to the IMS staff members, who had performed various tasks in connection with the convention, thanked the Iowa Association of Medical Assistants, which had provided coffee at the Sunday meeting of the House, and thanked Dr. Charles Baker, of Fort Dodge, who had served as his personal parliamentary counsel. He said that he had succeeded to his office following the untimely death of Dr. Lawrence Halpin, and noted that his task had been made easier by a handbook which Dr. Halpin had annotated, in anticipation of his death. The Speaker said he thought the delegates would like to hear of this fine last effort of Dr. Halpin's in their behalf.

Dr. Birge moved that a suitable testimonial be presented to Dr. Otis D. Wolfe, in recognition of his outstanding service as president of the Society. It was unanimously adopted.

Dr. J. J. Redmond, of Cedar Rapids, moved that the Secretary be instructed to prepare a suitable letter on behalf of the House of Delegates and to send it to Mrs. Halpin. His motion was unanimously adopted. Dr. Birge introduced the following resolution, designed to protect the members of the Board of Trustees from individual liability for their actions in the conduct of Society affairs, and it was adopted:

Resolved, That the actions of the Board of Trustees of the Iowa Medical Society from the date of the last annual meeting to date be and they hereby are approved, ratified and confirmed.

Dr. K. H. Strong, of Fairfield, offered the following resolution and it was adopted:

Resolved, That Dr. Donovan F. Ward, of Dubuque, a member of the Iowa Medical Society, who has served in this House of Delegates as well as in the House of Delegates of the American Medical Association, be highly commended for the courageous and outstanding leadership he has displayed during the past year as president of the American Medical Association and for his ability as a most effective and articulate spokesman for organized medicine; and be it further

Resolved, That appropriate communication advising Dr. Ward of this commendation be transmitted to him at the earliest possible date.

It was announced that immediately following the adjournment of the House of Delegates, organizational meetings of the Board of Trustees and Judicial Council would take place.

The House of Delegates was adjourned by the Speaker at 11:00 a.m.

FIFTY YEAR CLUB MEMBERS

JUNE 15, 1965

Ash, William E. ..... Council Bluffs

Banton, Oscar H. ..... Charles City
Bartlett, George E. ..... New Sharon
Billingsley, John W. ..... Newton
Blaha, George A. ..... Whitten
Block, Charles E. ..... Davenport
Boice, Clyde A. ..... Washington
Bowers, Arthur S. ..... Orient
Bowie, Louis L. ..... Zearing
Braunlich, George ..... Davenport
Brinkman, William F. ..... Pocahontas
Bullock, William E. ..... Lake Park
Burbank, Dean S. ..... Pleasantville

Campbell, Thomas R. ..... Sioux Rapids
Carlile, Amos W. ..... Manning
Carlson, Frank G. ..... Mason City
Chase, William B., Sr. ..... Des Moines
Christensen, John R. ..... Palo Alto, California
Clapsaddle, John G. ..... Burt
Clasen, Henry W. ..... Littleton, Colorado
Closson, Charles L. ..... Walker
Cody, William E. ..... Sioux City
Cole, Elmer J. ..... Woodbine
Conmey, Roy M. ..... Sergeant Bluff
Connell, John ..... Des Moines
Cooper, Gladys A. ..... Lansing, Michigan
Cretzmeyer, Francis X. ..... Emmetsburg
Crew, Arthur E. ..... Marion
Crow, George B. ..... Burlington
Cusick, George W. ..... Davenport

Day, Philip M. ..... Oskaloosa
Decker, Jay C. ..... Sioux City
Ditto, Boyd L. ..... Burlington
Doane, Grace O. ..... Des Moines
Dorsey, Thomas J. ..... Fort Dodge
Downing, Leroy M. ..... Cedar Rapids

Egermayer, George W. ..... Elliott
Ennis, Harry H. ..... Iowa City

Farlow, Charles T. ..... Farnhamville
Foley, Walter E., Sr. ..... Davenport

Gearhart, George W. ..... Springville
Gernsey, Merritt ..... Long Beach, California
Gillett, Francis A. ..... Oskaloosa
Grubb, Merrill W. ..... Galva
Gutch, Roy C. ..... Chariton

Hamilton, Benjamin F. ..... Jefferson
Hansen, Robert R. ..... Marshalltown
Harken, Conreid R. ..... Osceola
Harris, Ray R. ..... Dubuque
Henkin, John H. ..... Sioux City
Heusinkveld, Henry J. ..... Clinton
Hickman, Charles S. ..... Centerville
Hill, Julia Ford ..... Grinnell
Hoffman, Paul M. ..... West Branch
Hollis, Edward L. ..... Marengo
Hopkins, David H. ..... Des Moines
Houser, Cass T. ..... Cedar Rapids
Housholder, Harold A. ..... Winthrop
Hudek, Joseph W. ..... Garnavillo
Huston, D. Ferrel ..... Burlington

Jaenicke, Kurt ..... Clinton
Johann, Albert E. ..... Des Moines
Johnson, Amos E. ..... Florence, Nebraska
Jones, Harry J. ..... Cedar Rapids
Joynt, Albert J. ..... Waterloo

Keech, Roy F. ..... Cedar Rapids
Keeney, George H. ..... Mallard
Kennedy, Elizabeth Smith..... Oelwein
Kern, Lester C. ..... Waverly
Kershner, Frank O. ..... Clinton
Keyser, Ralph E. ..... Marshalltown
Kimball, John E. ..... West Liberty
Kleinberg, Henry E. ..... Des Moines
Knox, James M. ..... Cedar Rapids
Kyle, William S. ..... Washington

Larson, Andrew G. ..... Dickens
Loes, Anthony M. ..... Dubuque

McCaffrey, Eugene H. ..... Des Moines
McClean, Earl D. ..... Des Moines
McCreight, George C. ..... Carmel Valley, California
McHugh, Charles P. ..... Sioux City
McMahon, Thomas ..... Clinton
McVay, Melvin J. ..... Lake City

Magee, Emery E. ..... Cedar Falls
Maplethorpe, Charles W., Sr. ..... Toledo
Matthey, Walter A. ..... Bettendorf
Maxwell, Charles T. ..... Sioux City

May, George A. ..... Forest Grove, Oregon
Meyers, Frank W. ..... Dubuque
Miller, Enos D. ..... Wellman
Minassian, Thaddeus ..... Des Moines
Mitchell, Claire H. ..... Cincinnati
Moore, Jesse C. ..... Vinton
Moorehead, Harold ..... Underwood
Murray, Frederick G. ..... Ames

Neal, Emma J. ..... Cedar Rapids
Neuzil, William J. ..... Cedar Rapids
Noble, Nelle S. ..... Des Moines

O'Brien, Stephen A. ..... Mason City

Palmer, Carson W. ..... Guttenberg
Parker, Robert L. ..... Des Moines

Rankin, William ..... Keokuk
Reeder, James E., Sr. ..... San Diego, California
Rogers, Claude B. ..... Earlville
Rohrbacher, William M. ..... Iowa City
Rose, Alvin A. ..... Story City
Rowley, William B. ..... Sioux City
Royal, Malcolm A. ..... Des Moines
Russell, Ralph E. ..... Waterloo

Saar, Jesse L. ..... Donnellson
Sanders, George ..... Miami, Florida
Saunders, William E. ..... Tucson, Arizona
Schnug, George E. ..... Dows
Senska, Frank ..... Iowa City
Severson, George I. ..... Slater
Snyder, Raleigh R. ..... Des Moines
Starr, Charles ..... Mason City
Stepp, James K. ..... Manchester
Stoakes, Charles S. ..... Lime Springs
Strawn, John T. ..... Vinton

Taylor, Maude ..... Ottumwa
Taylor, Robert S. ..... Davenport
Teufel, John C. ..... Davenport
Thomas, Clyde E. ..... Croton-on-Hudson, New York
Thomas, Colin G. ..... Monticello
Thompson, Howard E. ..... Dubuque
Thompson, James R. ..... Waterloo
Thornton, John W. ..... Lansing
Thornton, Thomas F. ..... Waterloo
Traister, John E. ..... Eddyville

Van Metre, Paul W. ..... Rockwell City
Victorine, Edward M. ..... Cedar Rapids
Vineyard, Thomas L. ..... Ottumwa

Walker, Charles C. ..... Des Moines
Walker, Thomas S. ..... Riceville
Walston, Edwin B. ..... Jackson Heights, New York
Ward, Loraine W. ..... Oelwein
Weingart, Julius S. ..... Des Moines
Weston, Robert A. ..... Des Moines
Whitaker, Ben T. ..... Boone
Wurtzer, Ezra L. ..... Clear Lake

Yocum, Albert L. ..... Chariton
Young, Howard O. ..... Cedar Rapids

INDEX

Accident prevention, Resolution concerning 439, 444
Advisory Committee to the Woman's Auxiliary 415
Aging and Chronic Illness, Subcommittee on 405
Aid to the Disabled 405
Alcoholism 409
AMA-ERF 415, 429
AMA Membership 400
Annual Meeting for 1967 449
Annual Washington Conference 402, 431
Areawide Health Facilities Planning 409, 440, 443
Areawide Health Facilities Planning, Resolution concerning 440, 443
Articles of Incorporation and By-Laws, Reference Committee on 448
Articles of Incorporation and By-Laws, Standing Committee on 403
Associate memberships 442
Association of the Professions 419
Attendance ..... 397, 442ff.

Bar Liaison Committee, Iowa 416
"Battered child" legislation ..... 402, 404, 431ff.
Bierring Memorial 422
Black Hawk County Resolution No. 9 ..... 440, 448
Blood-alcohol and Intoxication 408
Blood Banking, Committee on 414
Blood Banking, Supplemental Report of Committee on 436, 445
Blue Chip Contract 423ff., 440, 442, 447
Blue Shield (Iowa Medical Service) ..... 402, 418, 422ff., 432, 440, 442, 444, 446ff.
Blue Shield, Reference Committee on ..... 446ff.
Board of Trustees, Confirmation of actions of 449
Board of Trustees, HANDBOOK Report of 401
Board of Trustees, Supplemental Reports of 419, 446ff., 448ff.
Boone County Resolution No. 11 ..... 440, 446
Building project 421ff., 449

Cardiopulmonary Laboratory at Mercy Hospital, Des Moines 402
Child-abuse reports ..... 402, 404, 431ff.
Chiropractic Committee 414
"Civil Defense News Digest" 415
Community Health Education Workshop 411
Community Mental Health Centers 434, 445
Compulsory Immunization of Children, Resolution on 440, 446
Conference on Medical Quackery 410, 411, 419
Confirmation of Actions of Board of Trustees 449
Cornell University Automotive Crash Injury Data Collection Program 408
County Health Departments 432
County Medical Review Committees 404, 418, 428, 447
Cytology, Exfoliative 418

Diabetes Detection 403
Diet Manual 403
"Disaster Planning" 415
Dispensing of drugs under OAA program 404
Doctors' Assistants' Advisory Committee 414
"Doctor's House Call" 411
Drivers' License Examinations 408, 433
Dubuque County Resolution No. 1 ..... 439, 445
Dubuque County Resolutions Nos. 2 and 3 ..... 439, 446

Eldercare 402, 410, 434, 441
Eldercare program, Resolution endorsing 441
Election 443
Ellis, Mrs. Howard, remarks 430
Essay Contest, AAPS 415
Executive personnel titles, amendment to Articles of Incorporation concerning 421, 448
Exfoliative Cytology, Committee on 418
Eyeglasses, protective 402, 404, 432

Fall Conference of County Medical Society Officers . 419, 448
Finances: Supplemental Report "J" of Board of Trustees 421, 449
Free choice of Physician under Workman's Compensation 402, 412, 432

General Activities: Supplemental Report "I" of Board of Trustees 419, 448
Grievance Committee 401, 409
Group Insurance, Committee on 416

Halpin, Dr. L. J., Letter to Mrs. Halpin concerning 449
Hardin, Dean R. C., remarks 429
Hawkeye Science Fair 410
"Health and Safety Research Guide" 411
Health Education, Committee on 411
Herlong-Curtis (Eldercare) Bill 402, 410, 434
Hill-Burton (or Hill-Harris) Law 402, 409, 431
Hospital Advisory Council 402, 431

Immunization of Children, Compulsory, Resolution concerning 440, 446
Immunizations 414
IMS Pathology-Blue Shield Study Committee .. 418, 425, 447
IMS Standards for Mental Health Centers 434, 445
Income Reports, Internal Revenue Service, Resolution concerning 440, 443
Individual Responsibility Plan 419, 427
Industrial Health, Committee on 412
Informational Report on Iowa Medical Foundation .... 429ff.
Insurance reporting forms, Resolution concerning ... 441, 446
Interprofessional Activities, Committee on 411
Intoxication, Blood-alcohol as an index of 408
Iowa Bar Liaison Committee 416
Iowa Interprofessional Association 411
"Iowa's M.D.'s Say" 411
Iowa Medical Foundation ..... 420, 429ff.
Iowa Medical Service (Blue Shield) ..... 402, 418, 422ff., 432, 440, 442, 444, 446ff.
Iowa Medical Society Position Statement: Usual-and-Customary-Fee Concept 427
Iowa Mental Health Authority 408, 432
IPPL Dues Billing, Resolution concerning 440, 448

Joint Statement: IMS and Blue Shield 425, 447
JOURNAL OF THE IMS 418, 449
Judicial Council, Report of 401

King-Anderson 402, 410, 420, 431, 436, 444

Legislation and Medical Service, Reference Committee on 444
Legislation, Committee HANDBOOK Report 402
Legislation, Supplementary Report of Committee on ..... 430ff., 444ff.
Leinbach, Dr. S. P., remarks 448
Liaison Committee, IMS-Blue Shield ..... 426ff.
Life and Associate memberships 442
Local Tax for Health Programs 402, 439, 446

MAA Liaison Committee 405
Maternal and Child Health, Subcommittee on 404
MD/DO Liaison Committee 401, 412
Medical Aid for the Aging 402, 405, 419, 431, 439
Medical Education and Hospitals, Committee on 409
Medical Examiner Act, Resolution concerning 441
Medical Examiners to be exempted from IPERS 432
Medical-Hospital Statistical Committee 403
Medical-Hospital Statistical Committee, Supplemental Report of 433, 445

Medical Practice in Hospitals and Nursing Homes, Committee on ... 418
Medical Service, Committee on ... 403
Medicare Claims Committee ... 416
Medicare Program ... 403, 416, 418
Medicine and Religion, Committee on ... 417
"Medicine in the Sixties" ... 411
Medico-Legal Committee ... 403
Membership, AMA ... 400
Membership, IMS ... 399
Memberships, Life and Associate ... 442
Memorandum of Understanding, IMS and Iowa Medical Service ... 423ff., 426ff., 447
Mental Health Authority ... 408, 432
Mercy Hospital, Des Moines, Cardiopulmonary Laboratory at ... 402
Mileage under Welfare Program, Resolution concerning ... 439, 446
Minutes of the April 29, 1964, meeting ... 398
Minutes of the April 11, 1965, meeting ... 413
Miscellaneous Business, Reference Committee on ... 443

National Emergency Medical Service, Committee on ... 415
Necrology Committee ... 402, 433, 443
Nervous and Mental Diseases, Subcommittee on ... 408
Nervous and Mental Diseases, Supplemental Report of Subcommittee on ... 434, 445
Nominating Committee ... 430
Nursing Education and Service Committee ... 403

Officers, Election of ... 443
Officers, HANDBOOK reports of ... 398
Officers, Supplemental reports of ... 419
Old Age Assistance ... 401, 405, 409, 431, 439, 446
Optometry, Committee on ... 418
Osteopath Approval Program ... 401, 410, 412
Osteopathic and MD/DO Liaison Committees ... 401, 412

Paramedical Services, Committee on ... 417
Paratyphoid, proposed change in diagnostic procedure for ... 433, 444
Pathology-Blue Shield Study Committee, IMS .. 418, 425, 447
Pharmacy, Physician Ownership or Control of ... 401, 411
Phenylketonuria testing ... 402, 404, 432, 445
Physical Therapists, licensure of ... 402, 417, 432
Physician-Hospital Contracts, Resolutions concerning ... 440, 441, 446
Pocahontas County Resolution No. 19 ... 442, 448
Podiatrists' services, proposal for Blue Shield coverage of 402
Policy-Evaluation Committee ... 417
Polk County Resolution No. 4 ... 439, 444
Polk County Resolution No. 5 ... 439, 444
Polk County Resolution No. 6 ... 439, 446
Polk County Resolution No. 7 ... 439-40, 443
Position Statement, Usual-and-Customary-Fee Concept .. 427
Postgraduate Medical Education Programs, SUI ... 409
Pottawattamie County Resolution No. 8 ... 440, 446
Preceptorship Committee ... 412
Premium Tax on Blue Cross, Blue Shield, proposed . 402, 432
Protective eyeglasses ... 402, 404, 432
Public Assistance, Subcommittee on ... 404
Publications Committee ... 418
Public Information Campaign ... 410, 420, 434, 445
Public Relations, Committee on ... 410
Public Relations, Supplemental Report of Committee on ... 434ff., 445

Quackery, Conference on Medical ... 410, 411, 419

Radiation Control, Committee on ... 417
Reference Committee Reports ... 443ff.
Rehabilitation, Subcommittee on ... 405
Relative Value Study Committee ... 414
Religion and Medicine, Committee on ... 417
Reports of Officers, Reference Committee on ... 448
Resolutions ... 439
Rural Health Committee ... 413

Safe Transportation, Subcommittee on ... 405
Safe Transportation, Supplemental Report of Subcommittee on ... 433, 444
Scheduling of IMS Annual Meeting, Resolution concerning ... 442, 448
School Health Education Workshops ... 411
Science Fairs ... 410
Scott County Medical Society Resolution No. 10 ... 440, 446
Scott County Medical Society Resolution No. 20 .. 442, 446ff.
Secretary, from the Office of ... 398
Senior medical student from SUI introduced ... 430
SIMPLIFIED DIET MANUAL ... 403
Speakers bureaus ... 410, 411
Special Committees, HANDBOOK Reports of ... 412
Special Committees, Supplemental Reports of ... 436
Special Fact-Finding Committee, Re: Usual-and-Customary-Fee Insurance Plans ... 437, 445
Standards on Mental Health Clinics ... 434, 445
Standing Committees, HANDBOOK Reports of ... 402
Standing Committees, Supplemental Reports of ... 430
State Board of Health, Reorganization of ... 402, 431
State Board of Health, Resolution concerning ... 439
State Claims Review Committee ... 418
State Departments, Committee on ... 403
State Departments, Supplemental Report of Committee on ... 433, 444
State Health Department, Resolution concerning ... 439, 445
State Hygienic Laboratory, request from ... 433, 444
Stateline Training Course on Health and Medical Services in Disaster ... 415
Statewide Blue Cross-Blue Shield group for physicians' employees, Resolution concerning ... 439, 444
Student Loan Program of the Iowa Medical Foundation 429ff.
Sunday Session, April 11 ... 397
Supplemental Report "I" of Board of Trustees: General Activities ... 419, 448
Supplemental Report "J" of Board of Trustees: Finances ... 421, 449
Supplemental Report "K" of Board of Trustees: Building Project ... 421ff., 449
Supplemental Report "L" of Board of Trustees: Blue Shield ... 422ff., 446ff.
Supplemental Reports of Special Committees ... 436
Supplemental Reports of Standing Committees ... 430

Taylor, Mr. Donald L., proposal to make him executive V-P of IMS ... 420, 448
Testimonial to retiring IMS President ... 449
"Tetanus and Its Prevention" ... 414
Treasurer, Report of the ... 400
Tuberculosis, proposed change in diagnostic procedure for ... 433, 444
TWX Machine ... 420
Typhoid, proposed change in diagnostic procedure for 433, 444

Usual-and-Customary-Fee Concept ... 414, 419, 420, 423ff, 428ff., 437, 440, 445, 447
Usual-and-Customary-Fees, Resolutions concerning ... 440, 441, 446
Usual-and-Customary-Fee Survey Committee .. 414, 419, 420
Usual-and-Customary-Fee Survey Committee, Supplemental Report of ... 437, 445
Utilization Committee ... 403, 433, 445

Vendor Payment Programs ... 401, 404, 418, 440, 446
Vitamin B-12 therapy ... 404
Voluntary Health Agencies, Committee on ... 419

Ward, Dr. Donovan, President of AMA ... 420, 449
Washington Conference, Annual ... 402, 431
Webster County Resolutions Nos. 14, 15, 16, 17, 18 ... 441, 446
Wednesday Session ... 442
Woman's Auxiliary Advisory, Committee to the ... 415
Woman's Auxiliary, remarks of the President of ... 430
Woodbury County Resolution No. 12 ... 440, 446ff.
Woodbury County Resolution No. 13 ... 440, 443
Workman's Compensation ... 402, 412, 432
Workshops, School Health Education ... 411

Youthpower Program ... 404

IOWA MEDICAL SOCIETY

Officers and Committees, 1965-1966

President ..... Frank G. Ober, Burlington
President-Elect ..... Samuel P. Leinbach, Belmond
Vice President ..... John M. Rhodes, Pocahontas
Secretary ..... Richard F. Birge, Des Moines
Treasurer ..... Verne L. Schlaser, Des Moines
Speaker of the House of Delegates
Paul M. Kersten, Fort Dodge
Vice Speaker of the House of Delegates
John L. Powers, Estherville

COUNCILORS

	Term Expires
First District, Clarkson L. Kelly, Jr., Charles City	1967
Second District, Jerome F. Paulson, Mason City	1968
Third District, John L. Powers, Estherville	1966
Fourth District, William M. Krigsten, Sioux City	1967
Fifth District, Ralph L. Wicks, Boone	1966
Sixth District, Clark N. Cooper, Waterloo	1967
Seventh District, L. Dean Caraway, Monticello	1968
Eighth District, James F. Bishop, Davenport	1968
Ninth District, Elmer A. Larsen, Centerville	1968
Tenth District, Elmo E. Gamet, Lamoni	1966
Eleventh District, Oscar Alden, Red Oak	1967

TRUSTEES

Cecil W. Seibert, Waterloo, Chairman	1967
John H. Sunderbruch, Davenport	1966
Kenneth E. Lister, Ottumwa	1968

DELEGATES TO AMA

	Term Expires
Herman J. Smith, Des Moines	December 31, 1966
Leslie W. Swanson, Mason City	December 31, 1966
Elmer M. Smith, Des Moines	December 31, 1967

ALTERNATE DELEGATE TO AMA

	Term Expires
Christian E. Radcliffe, Iowa City	December 31, 1967

EXECUTIVE COUNCIL

Frank G. Ober	Burlington
Samuel P. Leinbach	Belmond
John M. Rhodes	Pocahontas
Richard F. Birge	Des Moines
Verne L. Schlaser	Des Moines
Cecil W. Seibert	Waterloo
John H. Sunderbruch	Davenport
Kenneth E. Lister	Ottumwa
Clarkson L. Kelly, Jr.	Charles City
Jerome F. Paulson	Mason City
John L. Powers	Estherville
William M. Krigsten	Sioux City
Ralph L. Wicks	Boone
Clark N. Cooper	Waterloo
L. Dean Caraway	Monticello
James F. Bishop	Davenport
Elmer A. Larsen	Centerville
Elmo E. Gamet	Lamoni
Oscar Alden	Red Oak
Paul M. Kersten	Fort Dodge
Elmer M. Smith	Des Moines
Leslie W. Swanson	Mason City
Herman J. Smith	Des Moines
Christian E. Radcliffe (ex officio)	Iowa City
Otis D. Wolfe (ex officio)	Marshalltown
Charles N. Hyatt	Corydon
Robert C. Larimer	Sioux City

THE JOURNAL

Dennis H. Kelly, Sr. ..... Des Moines

Standing Committees of the Iowa Medical Society

Committee on Scientific Work

F. G. Ober, Chairman ..... Burlington
S. P. Leinbach ..... Belmond
R. F. Birge ..... Des Moines
V. L. Schlaser ..... Des Moines

Committee on Legislation

J. H. Kelley, Chairman ..... Des Moines
W. J. Morrissey ..... Des Moines
M. O. Larson ..... Hawarden
J. E. Kelsey ..... Des Moines
J. E. Blumgren ..... Vinton
R. L. Wicks ..... Boone
C. N. Hyatt ..... Corydon
H. G. Ellis ..... Des Moines
R. D. Liechty ..... Iowa City
Erling Larson, Jr. ..... Davenport
O. D. Wolfe ..... Marshalltown

Medico-Legal Committee

F. E. Thornton, Chairman ..... Des Moines (1968)
J. C. Nolan ..... Corning (1966)
W. M. Cannon ..... Waterloo (1968)
G. H. Ashline ..... Keokuk (1966)
Peter Van Zante ..... Pella (1967)

Articles of Incorporation and By-Laws

G. H. Scanlon, Chairman ..... Iowa City
E. G. Kettelkamp ..... Monona
O. D. Wolfe ..... Marshalltown
L. R. Fuller ..... Garner
D. A. Howell ..... Dubuque

Committee on Medical Service

G. G. Young, Chairman ..... Des Moines
R. E. Smiley ..... Mason City
W. A. Castles ..... Dallas Center
W. D. Perrin ..... Sumner
J. K. MacGregor ..... Mason City
A. P. Echternacht ..... Ft. Dodge
J. J. Redmond ..... Cedar Rapids
D. B. Blume ..... Sioux City
N. W. Irving ..... Des Moines

Medical/Hospital Statistical Subcommittee

G. G. Young, Chairman ..... Des Moines
R. E. Smiley ..... Mason City
W. A. Castles ..... Dallas Center
W. D. Perrin ..... Sumner
T. D. Throckmorton ..... Des Moines

Subcommittee on Medical Practice in Hospitals and Nursing Homes

A. P. Echternacht, Chairman ..... Ft. Dodge
L. S. Wentworth ..... Marble Rock
R. R. Edwards ..... Centerville
G. E. Montgomery ..... Ames
F. D. Winter ..... Burlington
C. H. Stark ..... Cedar Rapids
A. W. Puntenney ..... Boone
H. B. Eastburn ..... Burlington

Committee on Medical Education and Hospitals

R. N. Larimer, Chairman ..... Sioux City
L. H. Jacques ..... Iowa City
J. M. Layton ..... Iowa City
G. W. Howe ..... Iowa City
R. D. Rowley ..... Burlington
H. H. Kersten ..... Ft. Dodge
B. M. Merkel ..... Des Moines
E. M. Smith ..... Des Moines
G. H. Scanlon ..... Iowa City

GRIEVANCE COMMITTEE

1st Dist.—D. O. Maland ..... Cresco
2nd Dist.—J. M. Baker ..... Mason City
3rd Dist.—D. F. Rodawig, Sr. ..... Spirit Lake
4th Dist.—C. M. Marriott ..... Sioux City
5th Dist.—F. E. Thornton ..... Des Moines
6th Dist.—C. N. Cooper ..... Waterloo
7th Dist.—S. E. Ziffren ..... Iowa City
8th Dist.—J. L. Saar, Jr. ..... Burlington
9th Dist.—F. O. W. Voigt ..... Oskaloosa
10th Dist.—E. E. Gamet ..... Lamoni
11th Dist.—G. H. Powers ..... Shenandoah

COMMITTEE ON STATE DEPARTMENTS

(State Department liaison representatives are to be designated and will meet on an invitational basis with the Committee on State Departments and its subcommittees.)

A. H. Downing, Chairman ..... Des Moines
J. J. Spevak ..... Des Moines
C. B. Larson ..... Iowa City
L. J. O'Brien ..... Ft. Dodge
T. C. Piekenbrock ..... Dubuque
G. E. Montgomery ..... Ames

Subcommittee on Maternal and Child Health

J. J. Spevak, Chairman ..... Des Moines
W. J. Balzer ..... Davenport
Madelene M. Donnelly ..... Des Moines
Charlotte Fisk ..... Des Moines
D. O. Newland ..... Des Moines
R. P. Ferguson ..... Lake City
J. J. Weyer ..... Ft. Dodge
C. P. Phillips ..... Muscatine
A. L. Jensen ..... Clinton

Subcommittee on Aging and Chronic Illness

G. E. Montgomery, Chairman ..... Ames
E. E. Linder ..... Ogden
A. C. Wise ..... Iowa City
Sebastian Ambery ..... Keokuk
E. B. Floersch ..... Council Bluffs
H. W. Morgan ..... Mason City

Subcommitte on Rehabilitation

C. B. Larson, Chairman ..... Iowa City
D. C. Wirtz ..... Des Moines
F. G. Loomis ..... Waterloo
W. D. Paul ..... Iowa City
T. J. Greteman ..... Dubuque
W. D. deGravelles, Jr. ..... Des Moines
J. R. Walker ..... Waterloo
W. A. Baird ..... Ames

Subcommittee on Safe Transportation

A. H. Downing, Chairman ..... Des Moines
E. H. Barg ..... Mason City
M. H. Dubansky ..... Des Moines
J. T. Bakody ..... Des Moines
R. A. Wilcox ..... Iowa City
J. F. Kelly ..... Ft. Dodge
J. E. Houlahan ..... Mason City
R. E. Paul ..... Des Moines
C. W. Maplethorpe, Jr. ..... Toledo
T. E. Corcoran ..... Des Moines

Subcommittee on Nervous and Mental Diseases

T. C. Piekenbrock, Chairman ..... Dubuque
L. B. Sedlacek ..... Cedar Rapids
M. B. Emmons ..... Clinton
W. A. Tice ..... Waterloo
J. D. Mahoney ..... Council Bluffs
G. R. Rausch ..... Sioux City
W. A. Bockoven ..... Ames
R. E. Erikson ..... Davenport
R. M. Powell ..... Mason City
P. M. Kersten ..... Fort Dodge
J. I. Marker ..... Davenport

Subcommittee on Public Assistance

L. J. O'Brien, Chairman ..... Ft. Dodge
A. J. Havlik ..... Tama
E. B. Grossmann ..... Orange City
J. E. Kelsey ..... Des Moines
K. H. Strong ..... Fairfield
L. J. Kirkham ..... Mason City
C. J. Smith ..... Gilmore City
R. G. Robinson ..... State Center
Isaac Sternhill ..... Council Bluffs

MAA LIAISON COMMITTEE

W. J. Morrissey, Chairman ..... Des Moines
L. J. O'Brien ..... Ft. Dodge
A. J. Havlik ..... Tama
K. H. Strong ..... Fairfield
N. W. Irving, Jr. ..... Des Moines

COMMITTEE ON PUBLIC RELATIONS

J. G. Thomsen, Chairman ..... Des Moines
W. D. Abbott ..... Des Moines
J. F. Foss ..... Burlington
F. H. Entz ..... Waterloo
C. R. Wilson ..... Manson
M. E. Alberts ..... Des Moines
J. P. Trotzig ..... Akron
J. E. Houlahan ..... Mason City

Subcommittee on Interprofessional Activities

Oscar Alden, Chairman ..... Red Oak
Erling Larson ..... Davenport
Fred Sternagel ..... West Des Moines
G. J. Sartor ..... Mason City
C. A. Waterbury ..... Waterloo
R. J. Coble ..... Lake Park

COMMITTEE ON HEALTH EDUCATION

C. D. Ellyson, Chairman ..... Waterloo
J. G. Fellows ..... Ames
L. J. Kirkham ..... Mason City
I. J. Hanssmann ..... Council Bluffs
J. E. Tyrrell ..... Manchester
D. E. Wolters ..... Estherville

BLUE SHIELD LIAISON COMMITTEE
(Terms expire, July, 1965)

R. F. Birge, Chairman ..... Des Moines
J. W. Billingsley ..... Newton
H. W. Mathiasen ..... Council Bluffs
G. H. Scanlon ..... Iowa City
S. P. Leinbach ..... Belmond
J. J. Redmond ..... Cedar Rapids

Special Committees of the Iowa Medical Society

COMMITTEE ON INDUSTRIAL HEALTH

C. H. Johnston, Chairman ..... Des Moines
D. W. Coughlan ..... Des Moines
C. J. Lohmann ..... Burlington
M. G. Sanders ..... Ft. Dodge
L. A. Block ..... Davenport
R. D. Acker ..... Waterloo
N. A. Schacht ..... Ft. Dodge
Sidney Brody ..... Ottumwa
K. J. Judiesch ..... Iowa City
J. E. Kelsey ..... Des Moines

COMMITTEE ON RURAL HEALTH

J. W. Gauger, Chairman ..... Early
R. E. Griffin ..... Sheldon
R. E. Clark ..... Manchester
R. W. Boulden ..... Lenox
A. G. Felter ..... Van Meter
G. H. White ..... Des Moines
H. M. Readinger ..... New London
R. F. McCool ..... Clarion
R. J. Coble ..... Lake Park
A. H. Grau ..... Denison

PRECEPTOR COMMITTEE

L. D. Caraway, Chairman ..... Monticello
W. B. Henderson ..... Oelwein
D. G. Sattler ..... Kalona
C. E. Radcliffe ..... Iowa City
C. A. Nicoll ..... Panora

OSTEOPATHIC COMMITTEE

J. M. Rhodes, Chairman ..... Pocahontas
T. E. Shea ..... Storm Lake
R. N. Larimer ..... Sioux City
R. P. Lagoni ..... Eldridge
W. A. Seidler, Jr. ..... Jamaica
J. H. Spearing ..... Harlan
A. L. Jenks, Jr. ..... Des Moines
L. F. Staples ..... Des Moines

MD/DO LIAISON COMMITTEE

J. M. Rhodes, Chairman ..... Pocahontas
R. N. Larimer ..... Sioux City
T. E. Shea ..... Storm Lake
A. L. Jenks, Jr. ..... Des Moines
R. P. Lagoni ..... Eldridge

National Emergency Medical Service

R. H. Riegelman, Area 1 ..... Des Moines
J. F. Sulzbach, Area 2 ..... Burlington
M. E. Barrent, Area 3 ..... Clinton
S. E. Ziffren, Area 4 ..... Iowa City
D. J. Ottilie, Area 5 ..... Oelwein
C. O. Adams, Area 6 ..... Mason City
R. C. Larimer, Area 7, Chairman ..... Sioux City
H. R. Henstorf, Area 8 ..... Shenandoah

Woman's Auxiliary Advisory Committee

S. P. Leinbach, Chairman ..... Belmond
W. M. Krigsten ..... Sioux City
C. W. Seibert ..... Waterloo

Nursing Education and Service

H. G. Ellis, Chairman ..... Des Moines
J. T. McMillan ..... Des Moines
R. L. Miller ..... Waterloo
R. A. Young ..... Clarion
V. H. Carstensen ..... Waverly
K. K. Hazlet ..... Dubuque

Historical Committee

Dennis H. Kelly, Sr., Chairman ..... Des Moines
J. F. Foss ..... Burlington
P. W. Van Metre ..... Rockwell City
Fred Sternagel ..... West Des Moines

Committee on Group Insurance

W. O. Purdy, Chairman ..... Des Moines
G. E. Mountain ..... Des Moines
A. J. Gantz ..... Greenfield
A. M. Harwood ..... Waverly
R. S. Gerard ..... Waterloo
C. R. Aschoff ..... Cedar Rapids

Committee on Blood Banking

J. M. Layton, Chairman ..... Iowa City
F. D. Winter ..... Burlington
W. S. Pheteplace ..... Davenport
Fred Dick, Jr. ..... Waterloo
G. T. Joyce ..... Mason City
David Baridon, Jr. ..... Des Moines
D. O. Holman ..... Ottumwa
M. A. Meservey, Jr. ..... Des Moines

Policy-Evaluation Committee

C. V. Edwards, Sr., Chairman ..... Council Bluffs
J. J. Redmond ..... Cedar Rapids
S. P. Leinbach ..... Belmond
J. M. Rhodes ..... Pocahontas
H. J. Smith ..... Des Moines
J. K. MacGregor ..... Mason City
C. W. Seibert ..... Waterloo
L. F. Hill ..... Des Moines
G. M. Wyatt ..... Iowa City
D. F. Crowley, Jr. ..... Des Moines

Chiropractic Committee

R. A. Berger, Chairman ..... Davenport
W. D. Edgerton ..... Davenport
A. S. Owca ..... Centerville
E. H. DeShaw ..... Monticello
R. F. Wilker ..... Creston

Medicare Claims Committee

M. J. Rotkow ..... Des Moines
J. H. Kelley ..... Des Moines
H. K. Shiffler ..... Des Moines
D. H. Kast ..... Des Moines

Iowa Bar Liaison

R. P. Lagoni, Chairman ..... Eldridge
T. E. Corcoran ..... Des Moines
H. B. Weinberg ..... Davenport
J. M. Tierney ..... Carroll
R. D. Rowley ..... Burlington
W. M. Krigsten ..... Sioux City
G. W. Howe ..... Iowa City

Doctors' Assistants Advisory Committee

C. W. Seibert, Chairman ..... Waterloo
J. G. Thomsen ..... Des Moines
M. E. Barrent ..... Clinton

IMS Plan & Scope Committee

O. D. Wolfe, Chairman ..... Marshalltown
F. G. Ober ..... Burlington
S. P. Leinbach ..... Belmond
W. M. Krigsten ..... Sioux City
J. G. Thomsen ..... Des Moines
G. G. Young ..... Des Moines
R. F. Birge ..... Des Moines
C. W. Seibert ..... Waterloo
J. H. Kelley ..... Des Moines

Committee on Paramedical Service

J. F. Paulson, Chairman ..... Mason City
J. T. Bakody ..... Des Moines
H. C. Merillat ..... Des Moines
C. B. Larson ..... Iowa City
P. J. Leinfelder ..... Iowa City
J. T. McMillan ..... Des Moines
C. B. Preacher ..... Davenport

Committee on Radiation Control

F. R. Peterson, Chairman ..... Cedar Rapids
J. H. Kelley ..... Des Moines
H. B. Latourette ..... Iowa City
K. R. Cross ..... Iowa City
E. D. Warner ..... Iowa City
A. L. Jenks, Jr. ..... Des Moines
C. J. Smith ..... Gilmore City
M. H. Noun ..... Des Moines
P. W. Morgan ..... Mason City
C. H. Denser ..... Des Moines

Committee on Medicine and Religion

R. P. Ferguson, Chairman ..... Lake City
L. O. Ely ..... Des Moines
H. L. Skinner ..... Carroll
W. H. Megorden ..... Mt. Pleasant
G. A. Paschal ..... Webster City

Committee on Optometry

A. H. Downing, Chairman ..... Des Moines
R. H. Watt ..... Marshalltown
A. C. Wise ..... Iowa City
W. C. Giles ..... Council Bluffs

Committee on Exfoliative Cytology

K. R. Cross, Chairman ..... Iowa City
David Baridon, Jr. ..... Des Moines
H. W. Morgan ..... Mason City
C. W. Seibert ..... Waterloo
A. W. Brown ..... Des Moines
S. P. Leinbach ..... Belmond
F. W. Stamler ..... Iowa City
R. E. Weland ..... Cedar Rapids
D. O. Holman ..... Ottumwa
C. H. Denser ..... Des Moines

State Claims Review Committee

R. S. Gerard, Chairman ..... Waterloo
J. K. MacGregor ..... Mason City
W. A. Castles ..... Dallas Center
V. L. Schlaser ..... Des Moines
J. F. Paulson ..... Mason City
A. W. Boone ..... Davenport
C. H. Denser ..... Des Moines
A. P. Echternacht ..... Ft. Dodge
V. R. Heimann ..... Sioux City
A. R. Anneberg ..... Carroll
W. C. Friday ..... Burlington

Usual & Customary Fee Survey Committee

C. V. Edwards, Sr., Chairman ..... Council Bluffs
E. E. Linder ..... Ogden
J. M. Layton ..... Iowa City
R. C. Larimer ..... Sioux City
J. F. Paulson ..... Mason City
K. E. Wilcox ..... Muscatine
L. D. Caraway ..... Monticello

Committee on Voluntary Health Agencies

C. E. Schrock, Chairman ..... Iowa City
R. J. Peterson ..... Panora
John Sear ..... Alden
R. A. Berger ..... Davenport
J. W. Rathe ..... Waverly
W. D. Abbott ..... Des Moines
K. K. Hazlet ..... Dubuque

Fact-Finding Committee Re Usual and Customary Fee Insurance Plans

O. D. Wolfe ..... Marshalltown
F. G. Ober ..... Burlington
G. G. Young ..... Des Moines
J. K. MacGregor ..... Mason City
J. H. Sunderbruch ..... Davenport
J. M. Rhodes ..... Pocahontas
S. P. Leinbach ..... Belmond

Committee on Medical Economics

J. P. Gallagher, Chairman ..... Oelwein
E. F. Van Epps ..... Iowa City
D. F. Ward ..... Dubuque
G. E. Mountain ..... Des Moines
L. J. Miltner ..... Davenport

Ad Hoc Committee on Areawide Health Facilities Planning

H. L. Skinner, Chairman ..... Carroll
J. F. Bishop ..... Davenport
L. J. Galinsky ..... Des Moines
R. N. Larimer ..... Sioux City
W. J. Morrissey ..... Des Moines
J. M. Rhodes ..... Pocahontas
J. F. Sulzbach ..... Burlington
J. E. Tyrrell ..... Manchester

COUNTY SOCIETY OFFICERS

COUNTY	PRESIDENT	SECRETARY	DEPUTY COUNCILOR
Adair	L. H. Ahrens, Fontanelle	A. S. Bowers, Orient	A. J. Gantz, Greenfield
Adams	C. L. Bain, Corning	J. C. Nolan, Corning	J. C. Nolan, Corning
Allamakee	W. R. Withers, Waukon	C. R. Rominger, Waukon	C. R. Rominger, Waukon
Appanoose	E. F. Ritter, Centerville	R. E. Donahue, Centerville	E. A. Larsen, Centerville
Audubon	L. E. Jensen, Audubon	R. L. Bartley, Audubon	H. K. Merselis, Audubon
Benton	J. E. Blumgren, Vinton	C. E. Douglas, Belle Plaine	N. C. Knosp, Belle Plaine
Black Hawk	V. H. Plager, Waterloo	M. R. Dieckmann, Waterloo	C. D. Ellyson, Waterloo
Boone	T. E. Kane, Boone	W. G. Dennert, Boone	E. E. Linder, Ogden
Bremer	E. H. Stumme, Denver	J. W. Rathe, Waverly	R. E. Shaw, Waverly
Buchanan	J. L. Mochal, Independence	P. H. Tenney, Independence	P. J. Leehey, Independence
Buena Vista	R. E. Mailliard, Storm Lake	J. A. Cornish, Storm Lake	R. R. Hansen, Storm Lake
Butler	D. M. Everson, Shell Rock	F. F. McKean, Allison	F. F. McKean, Allison
Calhoun	D. C. Carver, Rockwell City	J. W. DeGroote, Lake City	G. S. Rost, Lake City
Carroll	Eleanor Roverud, Carroll	A. D. Anneberg, Carroll	J. M. Tierney, Carroll
Cass	D. E. Wilcox, Atlantic	W. F. Giegerich, Atlantic	E. M. Juel, Atlantic
Cedar	G. H. Utley, Clarence	O. E. Kruse, Tipton	O. E. Kruse, Tipton
Cerro Gordo	A. E. McMahon, Mason City	W. V. Wulfekuhler, Mason City	H. G. Marinos, Mason City
Cherokee	H. J. Fishman, Cherokee	M. D. Hayden, Cherokee	H. J. Fishman, Cherokee
Chickasaw	H. S. Jacobi, New Hampton	D. R. Olsen, New Hampton	M. J. McGrane, New Hampton
Clarke	G. B. Bristow, Oceola	E. E. Lauvstad, Oceola	G. B. Bristow, Osceola
Clay	C. C. Jones, Spencer	Eunice M. Christensen, Spencer	G. F. Fieselmann, Spencer
Clayton	C. C. Smith, McGregor	D. W. Pfeiffer, McGregor	P. R. V. Hommel, Elkader
Clinton	J. J. Young, Clinton	W. R. Meyer, Clinton	M. E. Barrent, Clinton
Crawford	J. M. Hennessey, Manilla	M. U. Broers, Schleswig	R. A. Huber, Charter Oak
Dallas-Guthrie	E. E. Lister, Dallas Center	R. J. Peterson, Panora	A. G. Felter, Van Meter (D) W. A. Seidler, Jamaica (G)
Davis	H. M. Perry, Bloomfield	P. T. Meyers, Bloomfield	P. T. Meyers, Bloomfield
Decatur-Ringgold	T. R. Viner, Leon	E. E. Gamet, Lamoni	E. E. Gamet, Lamoni (D) D. E. Mitchell, Mount Ayr (R)
Delaware	Mary Ann Croker, Manchester	H. M. Andersen, Strawberry Pt.	J. E. Tyrrell, Manchester
Des Moines	R. B. Allen, Burlington	C. B. Nessa, Burlington	R. B. Allen, Burlington
Dickinson	M. W. Kirlin, Spirit Lake	E. L. Johnson, Spirit Lake	E. L. Johnson, Spirit Lake
Dubuque	P. B. Skelley, Jr., Dubuque	J. R. Gilloon, Dubuque	R. J. McNamara, Dubuque
Emmet	E. K. Vaubel, Estherville	D. E. Wolters, Estherville	R. L. Cox, Estherville
Fayette	J. H. Ahrens, Oelwein	D. J. Ottilie, Oelwein	A. F. Grandinetti, Oelwein
Floyd	R. M. Nielsen, Charles City	E. V. Ayers, Charles City	E. V. Ayers, Charles City
Franklin	W. W. Taylor, Sheffield	D. K. Benge, Hampton	W. L. Randall, Hampton
Fremont		A. R. Wanamaker, Hamburg	K. D. Rodabaugh, Tabor
Greene	P. E. Lohr, Churdan	M. F. Wetrich, Grand Junction	E. D. Thompson, Jefferson
Grundy	W. H. Verduyn, Reinbeck	J. E. Rose, Grundy Center	J. E. Rose, Grundy Center
Hamilton	B. F. Howar, Webster City	E. F. Brown, Webster City	G. A. Paschal, Webster City
Hancock-Winnebago	N. D. Thede, Britt	T. J. Irish, Jr., Forest City	J. R. Camp, Britt
Hardin	K. H. Weaver, Union	F. N. Cole, Iowa Falls	L. F. Parker, Iowa Falls
Harrison	F. X. Tamisiea, Missouri Valley	R. G. Wilson, Missouri Valley	A. C. Bergstrom, Missouri Valley
Henry	H. M. Readinger, New London	C. W. Toland, Mt. Pleasant	J. S. Jackson, Mount Pleasant
Howard	H. E. Bergee, Cresco	P. F. Kepros, Cresco	P. A. Nierling, Cresco
Humboldt	J. H. Coddinton, Humboldt	Beryl Michaelson, Dakota City	I. T. Schultz, Humboldt
Ida	J. W. Martin, Holstein	J. B. Dressler, Ida Grove	J. B. Dressler, Ida Grove
Iowa	R. L. Sauer, Marengo	I. J. Sinn, Williamsburg	C. F. Watts, Marengo
Jackson	O. L. Frank, Maquoketa	P. F. Brown, Maquoketa	F. J. Swift, Jr., Maquoketa
Jasper	J. F. Maughan, Baxter	M. R. Moles, Newton	J. W. Ferguson, Newton
Jefferson	J. H. Turner, Fairfield	G. E. Egli, Fairfield	J. W. Castell, Fairfield
Johnson	A. C. Wise, Iowa City	R. J. Joynt, Iowa City	G. W. Howe, Iowa City
Jones	A. P. Randolph, Anamosa	J. L. Bailey, Anamosa	L. D. Caraway, Monticello
Keokuk	F. C. Perkins, Hedrick	R. G. Gillett, Sigourney	E. R. Gann, Sigourney
Kossuth	C. L. Plott, Algona	J. J. Lesiak, Titonka	M. G. Bourne, Algona
Lee	R. R. Kemp, Fort Madison	Sebastian Ambery, Keokuk	G. H. Ashline, Keokuk G. C. McGinnis, Fort Madison
Linn	W. K. Cooper, Cedar Rapids	J. D. Schuchmann, Cedar Rapids	H. J. Jones, Cedar Rapids
Louisa		L. E. Weber, Jr., Wapello	E. S. Groben, Columbus Junction
Lucas	T. C. White, Chariton	R. E. Anderson, Chariton	A. L. Yocom, Chariton
Lyon	H. H. Gessford, George	S. H. Cook, Rock Rapids	A. C. Wubbena, Rock Rapids
Madison	R. W. Carson, Winterset	E. G. Rozeboom, Winterset	J. E. Evans, Winterset
Mahaska	K. M. Lemon, Oskaloosa	F. O. W. Voigt, Oskaloosa	G. S. Atkinson, Oskaloosa
Marion	R. R. McClung, Knoxville	E. J. McKeever, Knoxville	G. K. Van Zee, Pella
Marshall	R. H. Kruse, Marshalltown	R. G. German, Marshalltown	R. C. Carpenter, Marshalltown
Mills	M. L. Scheffel, Malvern	W. A. DeYoung, Glenwood	M. L. Scheffel, Malvern
Mitchell	W. E. Owen, St. Ansgar	J. D. Swenson, Osage	T. E. Blong, Stacyville
Monona	L. A. Gaukel, Onawa	W. P. Garred, Onawa	L. A. Gaukel, Onawa
Monroe	H. J. Richter, Albia	D. N. Orelup, Albia	D. N. Orelup, Albia
Montgomery	Oscar Alden, Red Oak	H. C. Bastron, Red Oak	H. C. Bastron, Red Oak
Muscatine	Samuel Bluhm, Muscatine	K. E. Wilcox, Muscatine	K. E. Wilcox, Muscatine
O'Brien	R. E. Griffin, Sheldon	A. D. Smith, Primghar	E. B. Getty, Primghar
Osceola	F. B. O'Leary, Sibley	T. J. Carroll, Sibley	T. J. Carroll, Sibley
Page	C. L. Pettipiece, Shenandoah	K. V. Jensen, Clarinda	K. J. Gee, Shenandoah
Palo Alto	C. C. Moore, Emmetsburg	F. S. Conway, Emmetsburg	J. L. Coffey, Emmetsburg
Plymouth	L. A. George, Remsen	S. E. Lindell, Le Mars	R. J. Fisch, Le Mars
Pocahontas	H. L. Pitluck, Laurens	C. J. Smith, Gilmore City	J. M. Rhodes, Pocahontas
Polk	P. K. Hughes, Des Moines	J. W. Green, Jr., Des Moines	J. G. Thomsen, Des Moines
Pottawattamie	H. F. Trafton, Council Bluffs	J. L. Knott, Council Bluffs	G. H. Pester, Council Bluffs
Poweshiek	J. R. Parish, Grinnell	H. R. Light, Grinnell	S. D. Porter, Grinnell
Sac	C. D. Gibson, Sac City	R. H. Miller, Sac City	J. W. Gauger, Early
Scott	F. R. McFadden, Davenport	J. L. Kehoe, Davenport	Erling Larson, Davenport
Shelby	R. E. Donlin, Harlan	D. D. Crane, Shelby	J. H. Spearing, Harlan
Sioux	M. O. Larson, Hawarden	T. E. Kiernan, Sioux Center	M. O. Larson, Hawarden
Story	W. A. Bockoven, Ames	R. R. Sprowell, Ames	J. D. Conner, Nevada
Tama	C. R. Roberts, Dysart	A. J. Havlik, Tama	A. J. Havlik, Tama
Union-Taylor	J. L. Hoyt, Creston	W. A. Fisher, Creston	D. L. York, Creston (U) R. W. Boulden, Lenox (T)
Van Buren	K. Furumoto, Keosauqua	J. T. Worrell, Keosauqua	K. Furumoto, Keosauqua
Wapello	F. W. Morgan, Ottumwa	R. P. Meyers, Ottumwa	L. J. Gugle, Ottumwa
Warren	Amalgamated with Polk		
Washington	G. J. Nemmers, Washington	E. J. Vosika, Washington	G. E. Montgomery, Sr., Washington
Wayne	K. A. Garber, Corydon	C. N. Hyatt, Corydon	C. N. Hyatt, Corydon
Webster	A. P. Echternacht, Fort Dodge	M. E. Kraushaar, Fort Dodge	C. J. Baker, Fort Dodge
Winneshiek	Garfield Miller, Calmar	T. F. Dynes, Decorah	E. F. Hagen, Decorah
Woodbury	D. J. Wagner, Sioux City	H. H. Parish, Jr., Sioux City	C. M. Marriott, Sioux City
Worth	B. H. Osten, Northwood	M. P. Allison, Northwood	C. T. Bergen, Northwood
Wright	C. A. Aageson, Dows	D. L. Sweem, Belmond	D. L. Sweem, Belmond

JOURNAL of The IOWA MEDICAL SOCIETY

U.C. MEDICAL CENTER LIBRARY
AUG 9 1965
San Francisco 94122

IN THIS ISSUE

- Juvenile Delinquency
  Judge Byron B. Conway—Page 457
- Management of Missed Abortion
  Charles A. White, M.D.—Page 461
- The Hyperactive Child
  Gerald Solomons, M.D.—Page 464
- Cardiovascular Disease in Iowa
  Jason B. Lipkind, M.D.—Page 469
- Maternal Deaths: Iowa, 1952-1961
  Madelene M. Donnelly, M.D.—Page 475
- Case Against Typhoid Immunizations
  J. H. Sunderbruch, M.D.—Page 478
- University of Iowa College of Medicine
  Clinical Pathologic Conference—Page 479

AMYTAL TAKES THE EDGE OFF DAYTIME ANXIETY AND TENSION

Amytal is a moderately long-acting barbiturate that takes the edge off daytime anxiety and tension without significant change in mood and attitude. Since Amytal is metabolized in the liver within twenty-eight hours, overlapping of effect is minimized, and renal damage does not constitute an absolute contraindication to the drug.

Contraindications and Precautions: Persons with a history of porphyria should not receive barbiturates in any form. Administration in the presence of uncontrolled pain may produce excitement. Amytal should be used with caution in patients with decreased liver function, since a prolongation of effect may occur. Warning—May be habit-forming. **Side-Effects:** Idiosyncrasy or allergic reactions to the barbiturates may occur. **Dosage:** Doses should be individualized for each patient. The usual adult sedative dosage ranges from 30 mg. (1/2 grain) to 50 mg. (3/4 grain) two or three times daily.

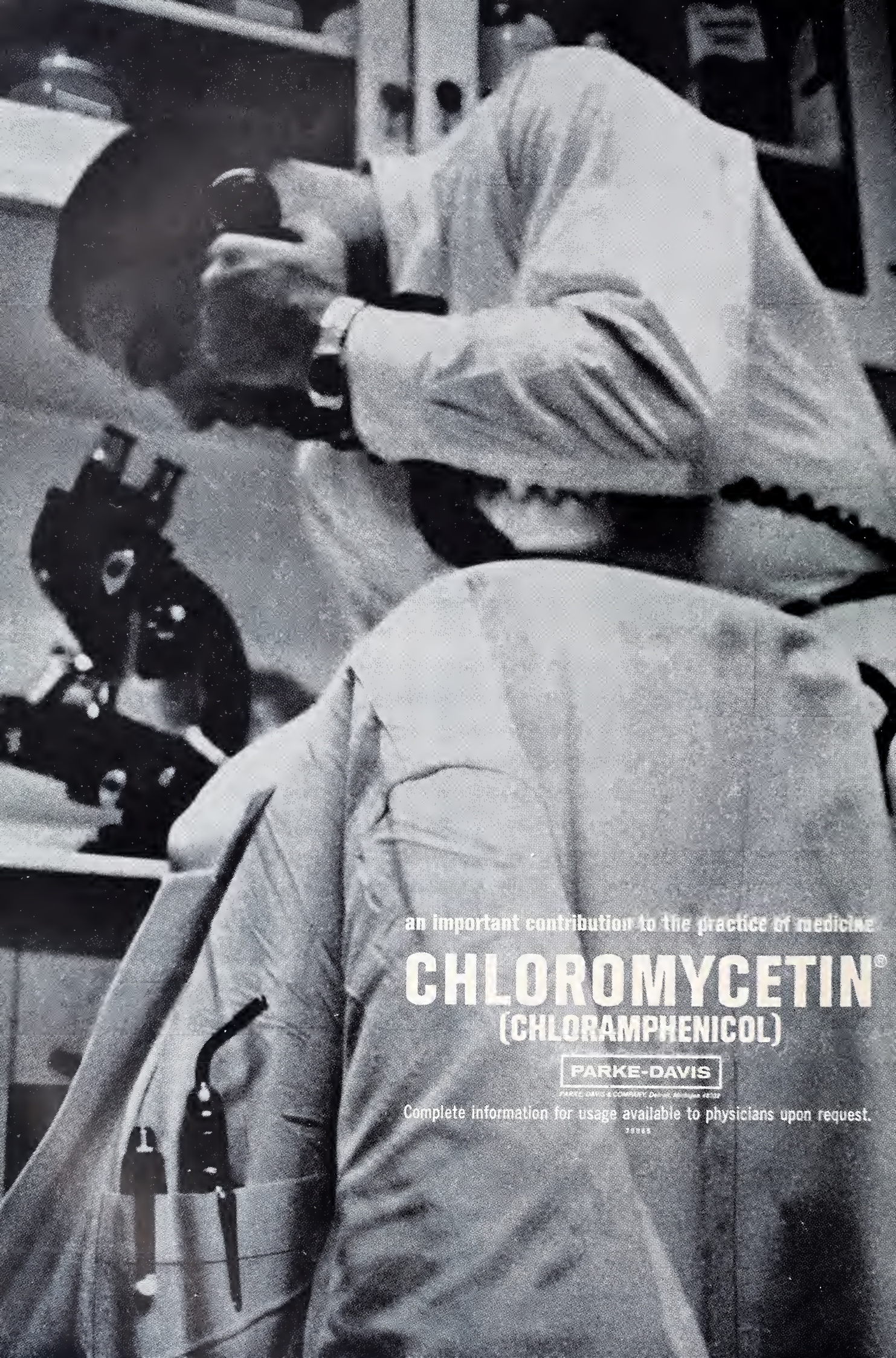
Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana.

AMYTAL® AMOBARBITAL

Lilly

500837

AUGUST, 1965


an important contribution to the practice of medicine
CHLOROMYCETIN®
(CHLORAMPHENICOL)
PARKE-DAVIS
Complete information for usage available to physicians upon request.

LACTINEX®

TABLETS & GRANULES

help restore
d stabilize the
estinal flora

or fever blisters
nd canker sores
herpetic origin

LACTINEX—a viable culture containing both *Lactobacillus acidophilus* and *L. bulgaricus*—was first introduced to help restore the flora of the intestinal tract in infants and adults.[1, 2, 3, 4]

Further clinical work showed LACTINEX to be successful in the treatment of fever blisters and canker sores of herpetic origin.[4, 5, 6, 7]

No untoward side effects have been reported in 12 years of clinical use.

Literature on indications and dosage available on request.

(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

HYNSON, WESTCOTT & DUNNING, INC.

(LX02)

HW&D BALTIMORE, MARYLAND 21201

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV AUGUST, 1965 No. 8

CONTENTS

Juvenile Delinquency
Judge Byron B. Conway, Wisconsin Rapids, Wisconsin 457

SCIENTIFIC ARTICLES

The Management of Missed Abortion
Charles A. White, M.D., Iowa City 461

The Hyperactive Child
Gerald Solomons, M.D., Iowa City 464

Cardiovascular Disease in Iowa
Jason B. Lipkind, M.D., Washington, D. C. . 469

Maternal Deaths: Iowa, 1952-1961
Madelene M. Donnelly, M.D., Des Moines . . 475

The Case Against Typhoid Immunizations During Flood Periods
J. H. Sunderbruch, M.D., Davenport 478

University of Iowa College of Medicine
Clinical Pathologic Conference 479

EDITORIALS

The New Virus Laboratory in Iowa City . . . 487

Are We Our Brother's Keeper? 487

Avoidance of Catheter Infections 490

Prevention of Coronary Artery Disease . . . 491

Caveat Emptor! 492

SPECIAL DEPARTMENTS

President's Page 493

Coming Meetings 497

Journal Book Shelf 498

Iowa Chapter of the American Academy of General Practice 501

Iowa Association of Medical Assistants 502

The Doctor's Business 503

State Department of Health 504

In the Public Interest . . . . . facing page 508

Woman's Auxiliary News 509

The Month in Washington xviii

Personals xx

Deaths xxxii

MISCELLANEOUS

Continued Decline in Prices of Drugs 486

AMA Suggestions for the Reform of Boxing . . 492

Action of the AMA House of Delegates New York Meeting 494

Blue Cross Visiting-Nurse Benefits 500

Itching May Be a Sign of Cancer 500

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor..... .....Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D.....Iowa City
Floyd M. Burgeson, M.D.....Des Moines
Daniel A. Glomset, M.D.....Des Moines
Robert N. Larimer, M.D.....Sioux City
Daniel F. Crowley, M.D.....Des Moines

PUBLICATION COMMITTEE

Cecil W. Seibert, M.D.....Waterloo
John H. Sunderbruch, M.D.....Davenport
Kenneth E. Lister, M.D.....Ottumwa
Richard F. Birge, M.D., Secretary.....Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

Juvenile Delinquency

JUDGE BYRON B. CONWAY
Wisconsin Rapids, Wisconsin

It's certainly a thrill for me to talk to you physicians, because I think that of all the people in America whom we juvenile judges need to help us, the medical profession ranks in the forefront. And I don't believe that we've had the help from you that we need, probably because we haven't asked for it. I hope I'll be able to tell you why we need your assistance.

Some years ago, a Wisconsin doctor's family was in Florida during the winter months, and when it turned out that he had caught up on his OB cases and other pressing responsibilities and he too was able to get away for a while, he started for Florida. In order to spend as much time as possible on vacation with his family, he drove very hard, and when he got down into the hills of Tennessee, he was caught in a cloudburst, lost his way, and came to a stop at a hillbilly's cabin. Feeling that he could go no farther, he knocked on the door and asked whether he could come in and get some rest. The hillbilly told him that ordinarily he'd welcome him, but that his wife was about to have a baby. The traveler said, "I'm a doctor. Maybe I can help." The hillbilly refused, saying, "She's had 12 without a doctor, and I don't want to spoil her."

The doctor talked his way in, however, and it's fortunate that he did, for the mother almost died, and the baby, too. The doctor worked most of the night, and only toward dawn was he able to get a couple of hours' sleep.

Then he tried to leave without disturbing anyone. He just reached the front step of the cabin when the hillbilly caught him by the shoulder and asked, "Where are you going, Doc? You haven't paid me yet."

"What do you mean?" the doctor demanded. "If it hadn't been for me, you'd have lost your wife and baby."

"We don't argue such questions up here in the hills," the Tennesseean maintained. "If we can't get together, we go down and lay it before the county judge."

The doctor was incensed, and said, "All right, we will!"

Each then told his story to the county judge, and since the Wisconsin doctor wasn't a voter in that Tennessee county, the decision went for the hillbilly. So the doctor pulled out $10, gave it to him, and had stomped to the front door of the courthouse when the hillbilly overtook him. "Just a minute, Doc. Here's your money. You don't owe me anything. I just wanted you to see what a darned old fool our county judge is down here."

As we members of the medical and legal professions think of each other, there are times when we regard one another as darned old fools, but we do need each other, and we do appreciate each other. I do hope that before I'm through I'll be able to convince you that we people in the professions, who should be molders of thought, should assert the community leadership that was known a generation ago in all communities. I happen to be the son of a professional man. My father was a lawyer. There are other professional people in my family. I do know that while I was growing up in a small town, the people who were regarded as leaders and molders of thought were the doctors, the lawyers and the clergy, and I don't think such things were different in larger towns. Now such people are no longer consulted. We resent the neglect to some extent, I suppose. An obvious reason for it, no doubt, is more nearly universal education. But we must look at ourselves and see whether we haven't vacated our positions as community leaders, in the quest for the almighty dollar.

THE PROBLEM IS LARGELY EXTRA-LEGAL

Why should physicians be interested in the problem of juvenile delinquency? It's because entire communities must be interested. The members of the National Council of Juvenile Court Judges have learned that deviant behavior isn't a disease in itself, but is a symptom of many, many complicated disorders. We are convinced that if it is to be attacked and treated, it must be regarded as a symptom. Then through diagnosis, we must discover and remove the causes.

Human beings are individuals, and the things that affect one of them don't necessarily affect another. When we find an individual in deviant behavior, we can't merely take one look and say, "This boy is misbehaving." If we are to accomplish anything, we must look at the causes behind

his acts. Yes, you see in the newspapers and the current magazines every day that someone has come up with a panacea that in one fell swoop will eliminate all delinquent behavior. But you, as people who deal with human beings, know that ailments can't be cured in that way. Thank God physicians don't practice that way. You look at us as individuals, and know that you must treat us as individuals, finding out what the cause of each of our ailments is.

May I take just a few moments to tell you about the organization that I represent. We are a national organization with a membership of between 1,500 and 1,600 as of today. There are approximately 3,000 judges in the United States who have juvenile-court jurisdiction, but our membership of about 1,600 includes all of the judges who do any appreciable work in the juvenile courts. The others are out in small towns and are magistrates or part-time people who have only an occasional juvenile-court case. Our national headquarters is in Chicago, and during the past three years we have engaged in a program of training for the people who are doing juvenile-court work in this country. Some three years ago last September, a pilot institute was held in Excelsior Springs, Missouri, to determine whether or not this training concept was valid. We determined that it was. I happened to be one of the guinea pigs at the pilot institute, and Judge Tidrick, of Des Moines, was there with me.

Our type of training is not in our particular field of law. Rather, through week-long institutes carried on throughout the U. S. by virtue of a grant made to us by the National Institute for Mental Health, we get training in the behavorial sciences. We have had instruction from people competent to teach in psychiatry. We have had people who are in the field of education and have told us about the learning process of children as they develop. In other words, all through this program, we have gone outside of our own field and in that way have attempted to make ourselves better fit for dealing with human beings.

One of the most interesting aspects of this training consists of two 1½ hour sessions, or three hours per day, in which we are broken into groups of 12. We sit around a table in an unstructured program, and are told to talk. We can talk about anything we want, except that it must concern the here-and-now, rather than what our experiences have been back home. It is most interesting what one finds out about himself in that way, how one influences people, how what one does will influence people, and the things one finds irritating that might not properly be as irritating as they are. The institute at Excelsior Springs was one of the most interesting experiences I've had in my life.

We are carrying on other programs right now, through another grant from the Meyer Foundation. With the help of people who are conversant with psychology, we are studying the judge-boy relationship, in an attempt to determine just how we influence a boy who is brought in to us in juvenile court. The idea of this program is to interview the boy and his family before they go into court, to find out what their attitudes are and what they expect of the court, and then to interview them again afterwards to find out what reaction they've had and whether they feel that they've gained anything from being in court.

In the summers of 1966 through 1968, we'll put on month-long "colleges," at the University of Colorado Law School, for men who have been on the bench for two years or less.

We are trying to improve ourselves by study, by teaching, and by learning from people who are outside of our field, in the way that you people have learned, in attending your short courses, meeting other doctors, talking over mutual problems, and talking about whatever new has been discovered. We are trying to improve ourselves in that way.

PHYSICIANS ARE BEST QUALIFIED TO HELP US

But we have learned, through this experience, that the medical profession should be one of our most valuable allies. A physician is closer to a child and his parents than any outsider could possibly be. You, as people who are conversant in the field of behavioral science, and in the field of medicine as far as physical ailments are concerned, know the importance of what parents do, beginning in a baby's tiny infancy. You know that the relationship between that child and his parents, through the first years of his life, is ever so important in developing his trust in his fellow man, in developing his ability to get along with others, and in shaping his progress as he grows up.

You know that schools are filled to capacity all over the United States, and you know that because of the crowded conditions in schools, our school programs must be pretty much regimented. But I think that the adults in general, to a great extent —or at least parents—have abdicated their responsibility. They tend to feel that when they turn their children over to the schools, the discipline and training of those children is the school's concern, and that their own responsibilities have virtually ended. You see it in the mother who leaves and goes to work as soon as she can get her children into school. You see it in the fathers who don't sit down and talk with their children, and who say "If the teacher says that's right, that's all there is to it. That will be it!"

I, of course, talk to PTA groups quite often. Among other things that I say to those people when I talk to them (the teachers love me for it and some of the parents wince) is that I'd like to have parents remember that no teacher ever sees a child until the child is at least six years old, and a great deal of work must have been

done with that youngster in regard to discipline, recognizing authority and being able to get along under it, and getting along with others. If that work hasn't been done before the teacher first sees the child, at six years of age, it's pretty darn late for her to start the job.

Doctors are busy men, but doctors regularly see mothers who, when they start toilet-training, are doing things that physicians know are wrong. You know that the mother who is threatened herself, and is unsure of herself, or perhaps was brought up by parents who were inadequate, can vent her feelings on her child. You know that those things develop, and you know that you see it in the children as they come in to see you, maybe not for physical ailments but because neuroses have started to appear. Doctors must take the time to sit down and advise parents at that time.

You certainly can't be in your profession without knowing, as I do from my point of view, that fathers in America have almost abdicated their position in the family. Mothers have taken over. Women have become more aggressive in their attitudes in the household. Women have taken over the training and bringing up of the children. And you know that no boy can possibly grow up with a well-balanced personality unless he has the influence of a father who is serving as something of a template for him, and a father who is giving him masculine qualities, yes, a father who has given him an appreciation of how a good woman should be treated.

You are seeing these cases right along. But do you take the time, when you see a disturbed child in your office, and after questioning and diagnosis, when some of those answers are obvious to you, to call the father in, and talk to him, or at least to try otherwise to remedy the situation in the home that is obvious to you if you are seeing these children on anything but an assemblyline basis?

You know the growth process of children. You know that the successful completion of each step in the growth process is important to the orderly development of the child as he goes along. You know that that takes the help of an interested mother and an interested father, who actually are working together. You have the confidence of those parents. You have an opportunity to see where they are making mistakes, and you have the obligation to take some steps to see that those mistakes are corrected.

When a child gets into puberty, how many parents that you know are actually qualified to talk to their child about the changes that are taking place in him or her? As I've said, I am the son of a professional man. My father was quite an intelligent man, but he conscientiously stumbled around trying to tell me some of the things I needed to know at about that time. He finally said, "Oh, hell, Byron, go down and see Dr. ....," and I did. Dr. .... was recently out of the service, in World War I. He was all he-man and had been my friend and confidant all of my life, and he did a great deal better job than my dad could ever have thought of doing.

Parents come to you perplexed and frustrated, as their child gets into adolescence. They don't know how to handle the situation. They think their child, who has been complacent, easy to handle, and mindful of everything they have had to say, all these years, has suddenly changed. They think there must be something radically wrong with the child, that he has changed so radically. You know that adolescence is a pretty difficult time. I have brought up three children myself, and I hope I wasn't the worry to my parents during my teen-age years that my three were to me during theirs. But, strangely, they've turned out pretty well.

But you are the men whom your patients have confidence in, both your child patients and your adult patients. You can do something about these problems.

IF YOU CAN'T TREAT A PATIENT, YOU CAN REFER HIM

So far, I've talked about the normal growing up of a child and how you can help to see that the growing-up process is kept normal, at least so that the child can fit in and be a reasonably good social being. But delinquency is a serious problem in this country, and it is a problem that is increasing constantly.

I don't know that there are any valid statistics on what the increase has been, in spite of what we read in the papers. I do know that throughout history a big percentage of offenses, particularly the offenses against property—stealing, etc.—have been committed by young people. I do know that throughout history, acts of violence, for the most part, have been committed by young adults, and the pattern is still of that sort in this country, except that we are seeing a great deal more of it. I think perhaps part of the reason is that we have so many more youngsters. As a matter of fact, if the figures I've seen are correct, in 1970 we shall have more people under 18 in this country than we had of total population in 1890.

I think the other reason for what we read in the papers is that statistics and records are more carefully kept by police departments, by courts and by other agencies, and are sent in much more regularly than they were only a few years ago. You remember that when medicine began scientifically reporting tuberculosis and other infectious diseases, for a while it seemed that the problem was a great deal more serious than it actually was. In delinquency as in contagions, improved reporting is certainly a part of the explanation. But when I say that, I certainly don't want you to think I mean that our problem isn't a great one.

Our problem, generally, is caused by children who manifest seriously deviant behavior resulting, first, from brain disorders or brain defects. Those definitely are in your field, and it is a field that medicine must handle unaided. But is the average general practitioner actually searching as he should for those cases—for the youngsters who are likely to get into trouble?

We also know that a great deal of this deviant behavior is the fault of families in apparent social and economic comfort. When that type of behavior is manifested by a youngster from a family of that kind, you are trained and are able to determine whether the cause is some psychopathology in the family. You are trained at least to recognize and do something about those things, even if it is only to refer the problem to somebody who can. Now certainly if it isn't serious, there is no one in a better position than the doctor in whom that family has confidence. If it is beyond your capability, do you keep yourself informed as to the agencies that are available in your community to help you, and do you seek out the help that is available?

Too often, don't you let those families depend on you, and take refuge in the fact that they have gone to their doctor, rather than face up to the fact that serious psychotherapy is necessary, even to the extent of putting their little darling into an institution? You know that you have people who will lean on you in that way, if you let them do so. In juvenile court, we are seeing children right along, from families that can give us no reason why there should be trouble. But we do know that family physicians can give us a lot of help, when we talk to them.

We also know that we have a great hard core of trouble from people who are economically and socially deprived. Certainly, unless you are in public health clinics, they are not in your field, but I believe that it is the duty of the practitioner who deals with children and their parents to know what is available in his community and to take steps to see that those facilities are used.

I am quite conscious of your obligation to confidentiality. I'm quite conscious that no family physician can, without second thought, report something that he sees about a family. But you know you'll do it for tuberculosis; you'll do it for other things; and you know that if you inquire and keep yourself informed about your community, you can speak to agencies and to the schools, and say, "I feel that this boy needs a little help," and see that a referral is made. If the family hasn't cooperated with you, when you have attempted a referral, that's something you can do.

TOGETHER, WE MUST REESTABLISH IDEALISM

I believe that the profession of medicine is an ally that can help us to an extent never before experienced. I believe it is an ally that we can't get along without. I believe it is our fault that we haven't come to you. I think it is marvelous that you've asked me to come down and talk to you in plain language, as I have this morning. But I know that physicians, in dealing with children and their families, must begin bringing the family members together and making parents know how important their day-to-day training of the child can be, and how significant their intra-family behavior and relationships can be in the child's development. Until they do this, until they and we effect some change, in this day and age, we're going to see an increase in the behavior that's causing us so much concern.

We can't change civilization. We know that as each community has gone from a simple, rural organization to a more complex society such as we now live in, homes have broken down. The contacts between families, neighborhoods, and their children break down. We're not going to reverse that process, but crusaders in dealing with children and their families can do a great deal to retard the deterioration.

Again, I think the deviant behavior that we see among children in this country today is definitely a reflection of the morals and mores of the adult communities in which those children live. We don't have the idealism we don't have the strict social codes that we had only a generation ago. Again, let me be personal and refer to my own family. I was practicing law before I first learned that my father ever took a drink. I learned afterwards that in his younger years he had. He was an Irishman, and of course, he had acted like a young Irishman. But during all of the years while I was growing up, I never learned that my father ever took a drink. Again I say that I've brought up three children myself. We've had cocktail parties in our home during all of our youngsters' teen-age years, and they saw us having cocktails. Now I don't mean that we were immoral, but I cite it as an example of the change in the attitude of parents toward their children that has come about within just a single generation.

You in medicine and we in the legal profession need to get back to some idealism, and actually get out and be crusaders. We need, as community leaders, actually to begin crying, preaching, screaming, and saying that if we want America to become what we dream of it to be a generation from now, it's time for us all to look at the things we do, as adults, that are wrong. We need to consider the examples that we are setting for the generation that is growing up. We need to bring back the idealism which was contemplated in the oath that I have taken and in the oath that you have taken, to be influential in our respective communities in bringing those ideals up to the level where they should be.

Scientific Articles

The Management of Missed Abortion

CHARLES A. WHITE, M.D.
Iowa City

MISSED ABORTION implies an intrauterine fetal death during the first two trimesters of pregnancy, but without spontaneous evacuation of the uterus. A review of the recent literature shows that it is a rather controversial topic.

First, a definition is in order. The latest edition of the text by Eastman and Hellman[1] defines a missed abortion as one in which "the fetus dies *in utero*, but the product of conception, instead of being expelled, is retained for two months or longer." That inflexible definition differs little from those in previous editions. Reid's text[2] says that a missed abortion is one in which "the conceptus has died *in utero*, and for no apparent cause is retained and not delivered for weeks or even months after its death." This definition avoids the exact "two months" specification. A recent article from the Mayo Clinic[3] defines missed abortion as an entity in which "development of the fetus has been at a standstill for at least four weeks prior to the twenty-eighth week of gestation."

SIGNS AND SYMPTOMS

Now we can proceed to the management of this entity, which also is controversial. The early pregnancy of a woman who eventually will have a missed abortion would seem to be natural. There are the amenorrhea, breast changes and uterine growth, until the death of the fetus occurs. She then may or may not have symptoms of a threatened abortion, but if these occur, they then subside. The uterus may remain stationary in size, but usually it becomes somewhat smaller. The breasts usually regress, and the patient may lose weight. From the article by Spraitz *et al.*[3] we have a tabulation of these early symptoms in 66 cases of missed abortion (Table 1). These are the complaints that brought the women to their physicians. The majority of them complained of the first three items listed—decrease in uterine size, increased vaginal discharge and vaginal bleeding. The other complaints were cited with lesser frequencies. Interestingly, only 11 per cent of the patients had observed a cessation of fetal movement.

As this entity persists, careful measurements of the uterus confirms that it has become smaller, probably because of an absorption of amniotic fluid and also because of some fetal maceration. Most of these women will then abort spontaneously, and we really don't know why some of them

TABLE I
MISSED ABORTIONS
SIGNS AND SYMPTOMS IN 66 CASES

	No. of Cases	Per Cent
Decrease in uterine size	42	64
Increased vaginal discharge	41	62
Vaginal bleeding	37	56
Abdominal pain	17	26
Weight loss	8	12
Cessation of fetal movement	7	11
Chills and fever	4	6
Anorexia	1	2

Dr. White is an associate professor of obstetrics and gynecology at the U. of I. College of Medicine. This article was prepared from the tape recording of a talk he gave at a U. of I. postgradute course on obstetrics and gynecology, January 22, 1964.

fail to do so, but maintain what becomes a missed abortion. In a series of some 400 cases of the retained-dead-fetus syndrome, a comparison of the menstrual ages and the sizes of the fetuses upon evacuation showed about six weeks as the probable time discrepancy between the death of the fetus and the evacuation of the uterus. Presumably this time is briefer when the pregnancy has been of shorter duration, and is longer in more advanced gestations. In the Mayo series,[3] the average time of intrauterine death was at the sixteenth week, and the further interval until termination of pregnancy averaged 51 days, with a generous range of from 28 to 130 days.

Hormonal determinations may be of some assistance in diagnosis and management of this problem. Scandinavian workers[4] have been active in this regard, but their findings haven't been particularly fruitful. The levels of pregnanediol excretion have been either normal or low. Estrogen determinations may be only slightly depressed or else severely reduced. Chorionic gonadotrophin is usually reduced or negative, but there have been cases in which it has remained positive at low levels. These workers have speculated that a vague etiologic factor is present—"a discrepancy or disbalance between estrogen and progesterone levels."

DIAGNOSIS

What methods are available for arriving at the diagnosis of missed abortion? There are the negative pregnancy test, the absence of previously heard fetal heart tones, a negative fetal electrocardiogram, an absence of fetal movement, and an x-ray of the abdomen in search for signs of intrauterine death. Radiologic evidence of death is not so accurate as one might wish, prior to the twenty-eighth week of gestation. If present, these fetal signs might include collapse of the skull, presence of gas in the circulation, or abnormal spinal curvature. If one can then be sure of being confronted with a missed abortion, he comes to the problem of treatment.

TREATMENT

In the past, there has generally been a conservative approach to this malady—one of watchful waiting, or what some might call "hopeful procrastination." Fears of an increased likelihood of infection, of provoking increased bleeding, and of the mechanical difficulties in dilatation and curettage under such circumstances have encouraged this expectant therapy. Those who oppose it, however, point out that this situation is emotionally trying for the woman and for her family. Too, there is the real danger of her developing a coagulation defect. There is the ever-present possibility that the abortion will complete itself at an awkward time or place, with the threat of severe hemorrhage. Presently, the trend seems to be toward a more aggressive approach. There is one notable exception, however, for the policy at the Boston Lying-In Hospital is still to treat conservatively.[2] The staff members there draw blood samples periodically for clotting studies, and generally allow their patients to evacuate the uterus spontaneously.

Those who disagree with the conservative approach state that the coagulation defect may occur abruptly. Although in the dead-fetus syndrome the onset is ordinarily insidious, in cases of missed abortion the bleeding diathesis can be rather abrupt. This problem can be due to fibrinogen depletion, to a circulating fibrinolysin or to a circulating anticoagulant. The deficiency may be of the labile factor V, or of factor VIII (the antihemophilic globulin), as well as hypofibrinogenemia.

If one accepts a more aggressive approach in the management of such a case, several modalities are available to him. Of course, the surgical evacuation of the uterus, either by dilatation and curettage or by hysterotomy, is available. More recently, though, there has been the utilization of either high doses of intravenous oxytocic agents, or the intra-amniotic injection of a hypertonic solution of saline or glucose.

In the use of intravenous oxytocics, the doses are quite large. Ordinarily, a concentration of 10 units (1 ml.) of Pitocin or Syntocinon in 1,000 ml. of 5 per cent dextrose in water is employed for induction or stimulation of labor *at term*. With missed abortion, however, it is necessary to employ a much higher concentration, ranging from 10 to 100 units in 500 ml. of dextrose in water. The usual intravenous tubing is satisfactory for the administration of this solution, but a constant-rate infusion pump offers a considerable improvement over the monitoring of drops from a bottle of the solution. All of us know the latter is fraught with some difficulty, if one is to maintain a constant rate, whereas the machine provides an accurate and steady flow rate.

Usually, the amount of oxytocin infused is between 100 and 200 milliunits per minute. That would compare with about 10 or 20 milliunits per minute when one is inducing or stimulating a patient at term. In some instances, as much as 4,000 milliunits of oxytocin per minute may be required to produce a satisfactory outcome in a case of missed abortion.

With a small uterus, there may be some difficulty in determining adequate uterine contractility by palpation. If there is an opportunity to use a transducer and an amplifier-recorder to measure intrauterine pressures, one can solve this problem. But this equipment isn't frequently available, so one must then rely on clinical impressions regarding the quality of the contractions which are elicited.

One problem can be occasioned by the use of high dosages of oxytocin. When one is dealing

with this concentration of Pitocin or Syntocinon (particularly with one in excess of 50 milliunits per minute), there is a risk of water intoxication due to antidiuretic-hormone activity.[5] Pritchard[6] has reported that with this flow rate, urine flow was inhibited by about 90 per cent in his treatment of dead-fetus or incomplete-abortion cases. Because one must ordinarily use a rate in excess of 50 milliunits per minute in the treatment of missed abortion, this type of oliguria is a threat. One must pay strict attention to the amount of electrolyte in the fluid that is infused. The efficacy of this technic in evacuating missed abortions is attested to by Liggins.[7] In a series of 30 cases that he handled in this way, he had 27 successes, but he had one case of severe water intoxication.

In another technic, a hypertonic solution of either 50 per cent dextrose or 20 per cent saline is injected transabdominally into the amniotic sac. The exact mechanism of its action is unknown. Wood[8] has reported that the interval between the injection of such an agent and the onset of labor is shortest when the urinary pregnanediol excretions are lowest. It is stated that the injections may induce labor by diminishing placental progesterone production. Probably the action is not due to any increase in uterine volume, nor to any direct effect on the myometrium. This technic has been well described by Radcliffe and Radcliffe,[9] and it consists of removing approximately 200 ml. of amniotic fluid and replacing it with hypertonic solution. Usually there is a latent period of some 24 hours before effective contractions occur, and an additional 12 hours elapse before the uterus is evacuated.

CASE HISTORIES

We have recently had two cases of missed abortion, and I shall briefly summarize the case histories. The first patient was 31 years of age, gravida 5, para 4, and her last menstrual period had begun on July 20, 1963. She was admitted to University Hospitals on December 13, 1963, at 21 weeks' gestation. Her complaints included slight vaginal spotting and a lack of increase in uterine size during the preceding six weeks. She had, however, noted persistent breast engorgement. The uterus was the size of a 14-week pregnancy. Her serum chorionic gonadotrophin (A-Z) test was negative. A serum fibrinogen drawn on the same day was within normal limits. The diagnosis of missed abortion was made, and on December 18 she was given a six-hour course of dilute intravenous Pitocin. Her cervix was most unfavorable at the start, and on that first day there was only some cervical effacement. On the next day, a second course of Pitocin caused a spontaneous evacuation of the uterine contents. The amniotic sac and placenta were expelled intact from the uterus, and when the sac was opened, the fetus was lying within. This case was effectively handled through the use of Pitocin infusion.

The second case was managed by an injection of hypertonic saline into the amniotic cavity. The patient was a 22-year-old gravida 3, para 2, whose calculated date of confinement was March 22, 1964. She was first seen in mid-December, 1963, at 26 weeks' gestation. The fundus was then 27 cm. above the pubis, and fetal heart tones were audible. This woman was Rh-negative, sensitized, and her indirect Coomb's test showed a titer of 1:4,096. Two days later, fetal movement was lost, and on December 27 a serum determination of chorionic gonadotrophin was negative. On January 5, 1964, her blood fibrinogen was normal. On December 30 and on January 6 and 7, her urinary pregnanediol and estrogen levels were 17.1, 5.8 and 11.8 mg. per gram of creatinine, and 2.2, 1.6 and 1.2 mg./24 hrs., respectively. On January 8, we injected 110 ml. of 20 per cent saline solution into the amniotic cavity at 9:00 a.m. On the next day, a 750-Gm. dead fetus was evacuated at 1:00 p.m.

ADDITIONAL COMMENTS

There are some advantages to the intra-amniotic injection technic. It isn't necessary for a physician to sit with the patient, as he must after administering oxytocin. The patient isn't subjected to a prolonged intravenous infusion. No one should infer that she can be ignored, but the physician needs merely to inject, to remove the needle and to wait. To date, our results with this procedure have been most encouraging.

Besides missed abortion, there are two additional conditions for which the two technics just discussed can be used. One can use concentrated intravenous Pitocin for evacuating a hydatidiform mole, and follow it with a dilatation and curettage. The hypertonic solution can be employed in the dead-fetus syndrome, or instead of hysterotomy in a therapeutic abortion beyond the safe time for evacuation of the uterus by dilatation and curettage.

REFERENCES

1. Eastman, N. J. and Hellman, L. M.: Williams Obstetrics, 12th Ed. New York, Appleton-Century-Crofts, Inc., 1961, p. 526.
2. Reid, D. E.: Textbook of Obstetrics. Philadelphia, W. B. Saunders Co., 1962, p. 232.
3. Spraitz, A. F., Jr., Welch, J. S. and Wilson, R. B.: Missed abortion. Amer. J. Obstet. Gynec., **87**:877-881, (Dec. 1) 1963.
4. Missed abortion and labour. ACTA Obstetrica et Gynecologica, Scandinavica. Vol. XLI, Suppl. I.
5. Pittman, J. G.: Water intoxication due to oxytocin. New Eng. J. Med., **268**:481-482, (Feb. 28) 1963.
6. Whalley, P. J. and Pritchard, J. A.: Oxytocin and water intoxication. JAMA, **186**:601-603, (Nov. 9) 1963.
7. Liggins, G. C.: Treatment of missed abortion by high dosage syntocinon intravenous infusion. J. Obstet. Gynaec. Brit. Comm., **69**:277-281, (Apr.) 1962.
8. Wood, C., Booth, R. T. and Pinkerton, J. H.: Induction of labour by intra-amniotic injection of hypertonic glucose solution. Brit. Med. J., **2**:706-709, (Sept. 15) 1962.
9. Radcliffe, R. W. and Radcliffe, P. A.: Simplified induction of labour for patient with dead baby in utero. Canad. Med. Assn. J., **89**:414-415, (Aug. 31) 1963.

The Hyperactive Child

GERALD SOLOMONS, M.D.
Iowa City

THE HYPERACTIVE CHILD causes many difficulties for his family, for school authorities and for the physician. Much of the difficulty is not always caused by the patient, but is due to the different definition, interpretation and attitude of the family, the school authorities and the physician toward hyperactivity. Lack of agreement complicates and often magnifies the problem by creating antagonism between the school on one hand, which views the child's behavior as "disruptive," and the parents on the other, who regard their child as "all boy." The physician, often in the middle, finds nothing abnormal on examination, and sides one way or the other, depending upon how he is feeling that day or on the activity levels of his own children. He may prescribe medications on a trial-and-error basis, with no planned dosage scale or appropriate follow-up.

It is my intention in this article to review some of the factors involved in hyperactivity and the conclusions that can be drawn from some of them, leading hopefully to effective handling and appropriate therapy.

DEFINITION

The definition of *hyperactivity* is difficult, for the word means different things to different individuals. Physicians who treat all cases of hyperactivity with medication will obtain poor results. Those who use psychotherapy to treat all cases will likewise be disappointed. How does one differentiate one type of hyperactivity from the other, and which kind of hyperactivity will respond to a particular therapy? To answer these questions, one must possess sophistication in diagnostic acumen and knowledge of the various types of hyperactivity, and of the possible etiologic factors and criteria for their diagnosis.

According to Chess,[1] "The hyperactive child is one who carries out activities at a higher rate of speed than the average child, or is constantly in motion, or both." This statement merely defines hyperactivity, and unfortunately hyperactivity rarely appears alone. More often, hyperactivity is the most striking item in a symptom complex which has been described by many authors.[2-6] A convenient way to classify and diagnose behavior patterns of which hyperactivity is a main feature is according to their etiologies. They are as follows.

1. *Constitutional activity level or inherent temperamental dimension.* It is perfectly obvious that some people are more active than others, and there is no reason why this does not hold true for children as well as for adults. Thus there are constitutionally-determined levels of activity. It may be that non-active parents consider their normal child hyperactive because of their own concept of average motor activity. By the same token, a teacher may consider a child hyperactive because he fidgets or is easily distractible, or because his activity is beyond the level that is tolerable in a structured environment such as the classroom. This type of hyperactivity becomes worthy of notice only when it does not conform with our accepted standard of behavior. It can be extremely variable, for the child may act normally in many situations and environments, and there usually are no complaints regarding his academic performance or other deficiencies.

2. *Immaturity or "maturational lag."* There are some hyperactive children who have difficulty in reading, in abstract thinking or in assessing spatial relationships, but show no neurologic impairment other than clumsiness or incoordination. This may represent a delay in development or, as it is sometimes called, a "maturational lag." Parents and teacher often consider such a child "immature," and describe his behavior as a year or two under that of his chronologic age. (It should be noted that hyperactivity is considered a normal component of behavior in very young children.) Strictly speaking, this type of behavior can be diagnosed only when time produces a resolution of the deficiencies, but it can be tentatively suggested when the overall picture is that of a child whose behavior seems one or more years below his age level, and in whom no gross signs of neurologic impairment and no major problems are evident. The hyperactivity is variable, it is not extreme, and it has been much the same over the previous year or two, or is gradually improving. This child is not usually a behavior problem, unless

---

Dr. Solomons, director of the Child Development Clinic at the University of Iowa College of Medicine, made this presentation at the 1965 annual meeting of the Iowa Medical Society.

he is pressured by parents or teacher, and his hyperactivity is fairly well tolerated by them.

3. *Emotional disturbance.* The hyperactive, psychotic child with behavioral manifestations of childhood schizophrenia or autism is fairly obvious. The hyperactive neurotic child is more difficult to diagnose, and the diagnosis is usually made by exclusion. If there are no gross neurologic deficiencies and no gross intellectual impairment or perceptual problem, and if the history suggests the possibility of an emotional upset, a tentative diagnosis can be made. A psychiatric or psychological appraisal with projective and other tests should confirm the original impression. The hyperactivity associated with a purely behavioral problem is also variable, depending on the emotional state of the child and the circumstances of the moment.

4. *Diffuse brain damage.* A specific and characteristic disturbance of behavior has been noted after head injury, epidemic encephalitis and communicable disease encephalopathies in children. Sometimes no specific history is obtained. Various authors have given several different names to the disorder. "The hyperkinetic syndrome," as described by Werry *et al.*,[7] is "a symptom complex of chronic sustained severe hyperactivity; marked distractibility to extraneous stimuli; very short attention span; irritability and hyperexcitability." Laufer *et al.*[8] called such a pattern of behavior "the hyperkinetic impulse disorder," and added several other behavioral manifestations to the syndrome such as emotional lability, low frustration tolerance, learning difficulties, visual-motor difficulties with consequent poor performance in arithmetic and reading, and irregular handwriting containing reversals. Irrespective of the label or description of the syndrome, however, chronic severe hyperactivity and an absence of neurologic defects are its two principal features.

Usually, this syndrome is considered to be due to brain damage, and because of the lack of gross neurologic defect or supportive history, the terms "minimal brain damage" or "minimal cerebral dysfunction" have been used. Prechtl[9] has described a group of hyperactive children with a choreiform syndrome characterized by slight, jerky twitchings of the limbs and head which show up in electroencephalographic tracings as muscle artifacts. A history of neonatal anoxia or other complications of pregnancy and delivery was elicited from the mothers of more than two-thirds of the children in that group. Pasamanick[10] also demonstrated this relationship between perinatal factors and behavior disorders in children, but other studies have refuted his interpretation.[11, 12]

The hyperactivity component in this syndrome is known to all physicians. There is nothing variable about this hyperactive behavior, and the child is often reported as "climbing the walls" or "into everything," or the parents say "We can't take our eyes off him for a moment." After the child leaves, the doctor's waiting room and frequently his examining room bear some resemblance to Hiroshima. The parents, the school and all other individuals connected with the child are unanimous regarding the severity of his hyperactivity, its having been present for years, and its being sustained at a high level throughout the child's waking hours. The youngster is unable to perform any function without continual movement. He watches television for brief periods, punctuated by excursions and forays. He interrupts his meals in a similar manner. The distractibility as well as the hyperactivity of such a child is obvious.

Studies have shown that the attention spans of these children remain constant, irrespective of environment. Hutt *et al.*[13] have shown that in brain-damaged children each abrupt change of activity is usually accompanied by a similarly abrupt change of visual fixation. (In other words, as soon as the child's visual attention is attracted to something else, his activity changes and is now directed to that stimulus which attracts him.) The non-brain-damaged hyperactive child, however, can continue with his present activity while looking away from the task at hand for fairly long intervals of time. This is a good differentiating feature between the hyperactive brain-injured and non-brain-injured child when it can be ascertained.

The hyperkinetic impulse disorder can occur in early infancy or may not become prominent until five or six years of age. (Experience with these children has shown that the manifestations of the hyperkinetic syndrome disappear by the end of adolescence, at least, and often before this, if medication is used.) The actual time for a given child, however, cannot be predicted. Children who are not treated may have residual personality or emotional problems after the hyperkinesis has disappeared.

Not all of the items described as characteristic of hyperkinetic impulse disorder need be present simultaneously, and they may present singly or in combination, varying in the degrees of their manifestation over a period of time.

THEORY

Compared with adults, children are normally hyperactive and impulsive, and have short attention spans and poor powers of concentration. As a rule, this pattern of behavior changes, as it does in hyperkinetic children, and it is therefore reasonable to suppose that a process of maturation takes place. The diencephalon is probably fully formed and functionally active at birth, whereas the cortex continues to grow until at least the sixth year. It is postulated that as the cortex grows it can exert greater influence, allowing better organized and more discriminating responses, par-

ticularly in the ability to inhibit, which is one of the characteristics of maturation. The role of the diencephalon has been considered to be a sorting and routing mechanism for sensory impulses going to the higher brain centers. A fragmentary hypothesis is based on the concept that stimuli pass through the diencephalon on the way to the cortical areas, and that the diencephalon patterns, routes and gives valence to those stimuli. Thus, injury or dysfunction of the diencephalon would alter resistance at the synapses, and therefore all incoming impulses would then spread out of the usual pathways and irradiate large cortical areas, causing the typical hyperactive behavior described.

Experimental evidence has supported this theory to some extent. Gastaut[14] has shown that when Metrazol is injected into an adult, a normal threshold can be established which is measureable as the number of milligrams of Metrazol per kilogram of body weight required to produce a specified type of response clinically and in the EEG tracing, when the patient is exposed to the flickering of a stroboscopic light. The EEG, he found, showed spike wave bursts, and a myoclonic jerk of the forearms was observed in the patient. This procedure has been carried out in children by Laufer *et al.*, with similar results. Children with the hyperkinetic impulse disorder have significantly lower photo-Metrazol thresholds than do children of comparable ages without the syndrome.

In a continuation of those experiments, it was noteworthy that when a child's hyperkinetic behavior was controlled by dextro-amphetamine, his photo-Metrazol threshold increased to normal, and then lowered again when the drug was discontinued. It is reported that amphetamine inhibits or lowers the level of synaptic transmission, and it has been suggested that the site of action of amphetamine may be related to the brain-stem reticular activating system of Magoun. This, therefore, suggests that amphetamine, by raising the level of synaptic resistance at the diencephalic level, tends to restore the normal function of the diencephalon and thus prevents a flooding of the cortex by a stream of impulses.

It is also postulated that the hyperkinetic impulse disorder eventually resolves about the time of puberty, as a result of maturational processes which allow normal cortical-diencephalic relations to become reestablished.

EEG FINDINGS

The EEG findings in these children are nonspecific. About 50 per cent show diffuse, slow dysrhythmia of minimal severity—and of uncertain significance in children—which could be due to brain damage or delay in maturation. Therefore the EEG is not particularly helpful in either the diagnosis or the possible etiology of the hyperkinetic-impulse disorder. Burks[15] showed in his study that children with abnormal EEG's were more likely to show impairment of perception and discriminative processes affecting school performance, whereas those with normal EEG records showed more deviant social-emotional tendencies.

MEDICATION AND THERAPEUTIC REGIMEN

1. *Dexedrine (dextro-amphetamine).* Bradley originally advocated the use of the amphetamines for behavioral disorders in children in 1937.[16] These drugs have been used continuously since then, with great effect on hyperactivity when cases have been judiciously selected. It seems paradoxical that this agent tends to slow up hyperactive children, whereas in the normal individual it produces hyperactivity. However, the theory of Gastaut and the postulated action of the drug itself provide an explanation.

Dexedrine is my first choice for the treatment of the hyperkinetic-impulse disorder. I do not mention the word "Dexedrine" to the parents, and when I give them a prescription, it is for amphetamine sulfate. I explain that I am giving them a medication to improve their child's behavior; I do not tell them that it will control the hyperactivity, or what to expect. I start off with a very low dosage—2.5 mg. at breakfast and noontime—which can be given as half of a 5-mg. tablet or as a half-teaspoonful of the elixir. The mother is instructed to call me in five days. If the child is one who will not respond to the drug, the mother will call me within two or three days and tell me that her child's behavior has become impossible, and that he is now "climbing the walls." If she waits until the fifth day, however, and then calls to say that there has been no change or very little improvement, then I am on the right track. I then increase the drug slowly, by 2½-mg. increments at five-day intervals, monitoring the amount by telephone. If the dosage is increased too rapidly, nervousness and an increase in hyperactivity may occur. After approximately two weeks of the therapy, I schedule another appointment with the parents, and explain the hyperkinetic disorder to them, the drug that they are giving to the child, and its action. I then explain the following points.

a. *Loss of appetite.* The parents are told that the drug is Dexedrine and that it will depress appetite, but that this effect is of no consequence and should disappear in a few weeks. There may be a loss of weight associated with the medication, but it too is of no importance.

b. *Interference with sleep.* The child may have difficulty in getting to sleep after taking the drug for a few weeks. He can overcome this in time, though it may be necessary for him to take a sedative at night for a short period, or take less of the drug in his noontime dose.

c. *Facial appearance.* After a few months on amphetamine therapy, the child's face may become extremely pale and sallow, with dark circles under his eyes—having what I describe as the "panda syndrome." The parents are forewarned of this, and are told to ignore it if it occurs.

d. *The drug is not habit-forming.* Many parents are apprehensive that any drug, particularly in such a dosage, will become habit-forming. They are reassured that their child will not become addicted to the drug, despite what they read in the papers about "goof balls" and "pep pills." Amphetamine is rarely given for hyperactivity beyond the age of 12 or 13, and I have never seen adverse effects from giving the medication, or withdrawal effects when therapy is terminated, in children under that age.

e. *Dosage and length of treatment.* I have had one child taking 75 mg. of Dexedrine per day for two years with no complications. The drug is increased slowly, at five-day intervals, until optimum behavior is evident. Once optimum dosage has been reached by means of the elixir or the tablets, the long-acting form of the drug (a spansule containing 5, 10 or 15 mg.) can be substituted, with supplemental tablets or elixir given at appropriate times. For example, a child may take one or two 15-mg. spansules in the morning, and require 2½ or 5 mg. by tablet or elixir at sometime during afternoon to hold him until bedtime. Therefore the dosage has to be juggled, the last dose being given late enough in the day to control the child's behavior in the evening, but not so late as to interfere with his sleep. The parents are also told that the drug may be continued for perhaps several years, and that the therapy may have a "plateau" effect, in that after a few months on a particular dosage, the child's behavior may tend to regress a little. At that time, a slight increase in dosage should produce a beneficial effect.

I have found that Dexedrine, used in this way, produces improvement—absolutely dramatic at times—in approximately two-thirds of the cases. When Dexedrine produces an increase in hyperactivity, irritability or nervousness and crying jags, benzedrine sulfate used in exactly the same way sometimes is successful. In the main, however, where Dexedrine is unsuccessful, Ritalin is the second choice.

2. *Ritalin (methylphenidate).* This drug was first used in 1959 on children with behavior disorders. A controlled study by Connors and Eisenberg,[17] in 1963, showed reliable improvement in the drug group, however with wide individual differences in responsiveness and appetite loss in 70 per cent of the treated children. It is now widely used, and many prefer it to Dexedrine, although a controlled experiment by Comley,[18] comparing the two drugs, failed to substantiate this objectively. The supporters of Ritalin feel that it has fewer side effects, particularly loss of appetite, nervousness or emotional lability during the first few weeks of therapy, and that the parents are less likely to become apprehensive about a drug of which they know nothing.

My experience with Ritalin is somewhat limited, but I use the same regimen for it as for the amphetamines, and there is no doubt in my mind that the drug is effective. I usually start with a higher initial dose—5 mg. at breakfast and noon—and I add 2½-mg. increments as before. Where a child is unusually anxious and jittery, Ritalin might be the drug of first choice.

3. *Mellaril (thioridazine).* This drug has been in use for some years, and in 1964 Alderton and Hoddinott[19] reported a controlled study of its use in the treatment of hyperactive and aggressive patients in a children's psychiatric hospital. A double-blind study revealed a considerable reduction in aggressive, destructive and hyperactive behavior. Therefore, whenever aggressive and destructive manifestations are present along with hyperactivity, this drug should be considered.

It is not without side effects, and epileptic seizures have been reported where none had occurred prior to the commencement of treatment. On rare occasions, subclinical jaundice and granulopenia have occurred. Blurring of vision, dryness of the mouth, and nausea and/or vomiting are not uncommon (Waldrop *et al.*[20]). The initial dosage should be 10 mg. b.i.d., and it may be increased gradually to 25 mg. t.i.d., or more if necessary.

4. *Thorazine (chlorpromazine) and Compazine (prochlorperazine).* These drugs have been shown to be of great value in hyperactive mentally retarded children, particularly where temper tantrums, boisterousness and destructive behavior are evident.[21, 22] The results are better in patients whose disturbance is primarily emotional in nature. Along with improved behavior, an increase in the patient's IQ may become evident, possibly because of an amelioration of the severe emotional disorder which has depressed his academic performance.

The usual starting dose is 10 mg. b.i.d. or t.i.d., and it is increased gradually to a total of 50 or 100 mg./day if needed. When symptoms have been controlled for a short time, it is possible to reduce the dosage gradually to a maintenance level. The common side effects are drowsiness, dry mouth, nasal congestion and photosensitivity of the skin. The more serious side effects are jaundice, extrapyramidal symptoms and agranulocytosis. This drug may precipitate seizures in some susceptible patients not on anticonvulsant therapy, and also in patients with no histories of convulsive episodes at all. The overall dose of Thorazine should not be more than approximately 1 mg. per pound of body weight per day. Once the optimum dosage is reached, the spansule form of medication can be used.

I use Thorazine rather than Compazine because the margin of safety, as far as toxicity is concerned, appears to be greater in Thorazine and because I have found no advantage in the use of the newer preparation.

5. *Benadryl (diphenhydramine).* This is an excellent medication of low toxicity that is of great value in hyperactivity and behavior disorders. Fish[23, 24] reported good results with this drug, but

only in a younger age group. Fifty-seven per cent of children under 10 years of age improved significantly, as compared with only 9 per cent of those over 10 years of age. Hyperactivity was reduced, as was anxiety, without producing drowsiness or lethargy. It seemed to work better and to improve school performance in bright children with motor impulsivity, immaturity and learning problems. It can be given in a dose of 2-10 mg./kg./day. It is also useful at night as a sedative for children with sleep disturbances, and as a mild "tranquilizer" for children with minor school phobias or anxiety, without hyperactivity. The fact that it is an antihistamine and not a "drug" is reassuring to parents, and is worthy of emphasis.

For me, somehow, it has never worked too well, and I reserve it for patients who have a mild degree of hyperactivity and whose parents are extremely apprehensive regarding drug therapy of any kind.

OTHER CONSIDERATIONS

Concomitant with medication, other recommendations should be made. The parents should be exhorted to take pressure off the child wherever possible. In the past they have hovered over their offspring, often checking his activities before he actually gets into trouble. With the reduction in the youngster's hyperactivity, the parents learn to relax, and their child's anxieties and frustrations tend to diminish. They can tolerate him for longer periods of time, and gradually they can include him in their family activities and widen his previously restricted social experiences, with benefit for all. The child, previously excluded from school, may now be acceptable, with subsequent relief to the long-suffering mother.

In school, the lengthened attention span, increased frustration tolerance and diminution in hyperactivity all add up to teacher acceptance. The teacher should be warned, however, that everything is relative, and that this child is unlikely to sit sphinx-like in the classroom, and will still probably be more hyperactive than the others, though within the limits of acceptability. She should make allowances for the fidgeting and forays that undoubtedly will take place. Both teacher and parents should be encouraged to praise the child whenever he has done something well, and to build up his self-esteem whenever possible. Firm, structured but kindly handling should be the rule. Criticism should be withheld. A phrase that I use, perhaps abhorrent to the language purist, but easily interpreted by parents, is "if you can't praise him, don't knock him," and, to me, succinctly sums up the recommended attitude towards the child's performance.

At times the response to medication is dramatic, and a child goes from impending expulsion to a place in the top 10 per cent of his class within three months. The parents sometimes expect this miracle to continue to the extent that their child becomes a genius. It is wise to disillusion them early, and to help them recognize the point at which their child functions at his optimum level. Similarly, the physician should be prepared to tell parents that even though their child's hyperactivity may be reduced and his attention span increased, he still may function in the sub-average range of intelligence. The doctor should do his best to get them to accept their child's limitations.

In some cases, the emotional climate in the family is such that no great improvement can be produced in the children by medication alone, and such a family should be referred to a child-guidance clinic or some other psychiatric facility for evaluation and treatment. There also are a small number of youngsters who show no beneficial effects on the drugs previously mentioned, and some of the anticonvulsant medications such as Dilantin are worthy of trial, particularly if the EEG is abnormal. Phenobarbital often excites these children, particularly those in whom there is evidence of brain damage.

Treatment of the hyperactive child is relatively easy if the cases are picked judiciously, if the physician knows what he is doing, and above all, if he can convince parents of the necessity for following his orders strictly. To see a family, previously rent asunder by a hyperactive child and by the usual parental conflict about his handling, now suddenly able to live in harmony again is a great satisfaction to the physician, and he may even think subconsciously that Ben Casey is not such an impossible character after all.

REFERENCES

1. Chess, S.: Diagnosis and treatment of hyperactive child. New York J. Med., **60**:2379-2385, (Aug. 1) 1960.
2. Bradley, C.: Characteristics and management of children with behavior problems associated with organic brain damage. Ped. Clin. North America, **4**:1049-1060, (Nov.) 1957.
3. Laufer, M. W. and Denhoff, E.: Hyperkinetic behavior syndrome in children. J. Pediat., **50**:463-474, (Apr.) 1957.
4. Eurks, H. I.: Hyperkinetic child. Except. Child., **27**:18-26, (Sept.) 1960.
5. Sutherland, E. I.: Study of hyperkinetic syndrome and resultant social disability in childhood. Abstr. Third World Congress Psychiatry, Montreal, June 1961, p. 724.
6. Ounsted, C.: Hyperkinetic syndrome in epileptic children. Lancet, **2**:303-311, (Aug. 13) 1955.
7. Werry, J. S., Weiss, G. and Douglas, V.: Studies on hyperactive child. I. Some preliminary findings. Canad. Psychiat. Assn. J., **9**:120-130, (Apr.) 1964.
8. Laufer, M. W., Denhoff, E. and Solomons, G.: Hyperkinetic impulse disorder in children's behavior problems. Psychosomat. Med., **19**:39-49, (Jan.-Feb.) 1957.
9. Prechtl, H. F. and Stemmer, J.: Choreiform syndrome in children. Develop. Med. Child Neurol., **4**:119-127, (Apr.) 1962.
10. Pasamanick, B. and Knobloch, H.: Complications of pregnancy and neuropsychiatric disorder. J. Obstet. Gynaec. Brit. Emp., **66**:753-755, (Oct.) 1959.
11. Pond, D. A.: Psychiatric aspects of epileptic and brain-damaged children. Brit. Med. J., **2**:1454-1459, (Dec. 2) 1961.
12. Fraser, M. S. and Wilks, J.: Residual effects of neonatal asphyxia. J. Obstet. Gynaec. Brit. Emp., **66**:748-752, (Oct.) 1959.
13. Hutt, C., Hutt, S. J. and Ounsted, C.: Method for study of children's behaviour. Develop. Med. Child Neurol., **5**:233-245, (Jun.) 1963.
14. Gastaut, H.: Combined photic and Metrazol activation of brain. Electroencephalog. and Clin. Neurophysiol., **2**:249-261, (Aug.) 1950.

15. Burks, H. I.: Effects of amphetamine therapy on hyperkinetic children. Arch. Gen. Psychiat., **11**:604-609, (Dec.) 1964.

16. Bradley, C.: Behavior of children receiving benzedrine. Amer. J. Psychiat., **94**:577-585, (Nov.) 1937.

17. Connors, C. K. and Eisenberg, L.: Effects of methylphenidate on symptomatology and learning in disturbed children. Amer. J. Psychiat., **120**:458-464, (Nov.) 1963.

18. Comley, H.: Clinical management of hyperkinetic impulse disorder; etiology, diagnostic criteria; comparison of dextroamphetamine and methylphenidate effects. Speech given at meeting of Am. Orthopsychiatric Assn., Los Angeles, Calif., March 1962.

19. Alderton, H. R. and Hoddinott, B. A.: Controlled study of use of thioridazine in treatment of hyperactive and aggressive children in children's psychiatric hospital. Canad. Psychiat. Assn. J., **9**:239-247, (Jun.) 1964.

20. Waldrop, F. N., Robertson, R. H. and Vourlekis, A.: Comparison of therapeutic and toxic effects of thioridazine and chlorpromazine in chronic schizophrenic patients. Compr. Psychiat., **2**:96-105, (Apr.) 1961.

21. Bair, H. V. and Herold, W.: Efficacy of chlorpromazine in hyperactive mentally retarded children. AMA Arch. Neurol. & Psychiat., **74**:363-364, (Oct.) 1955.

22. Rettig, J. H.: Chlorpromazine for control of psychomotor excitement in mentally deficient; preliminary study. J. Nerv. & Ment. Dis., **122**:190-194, (Aug.) 1955.

23. Fish, B.: Drug therapy in child psychiatry: Psychological aspects. Compr. Psychiat., **1**:55-61, (Feb.) 1960.

24. Fish, B.: Drug therapy in child psychiatry: Pharmacological aspects. Compr. Psychiat., **1**:212-227, (Aug.) 1960.

Cardiovascular Disease in Iowa

JASON B. LIPKIND, M.D.
Washington, D.C.

THE STATE DEPARTMENT OF HEALTH has accumulated data regarding mortality and morbidity from cardiovascular disease—specifically coronary-artery disease, cerebrovascular disease, rheumatic fever and rheumatic heart disease. Our expanding interest in community service programming has shown us a need for such information. In the past, we have had to discuss programs such as home nursing, nutrition services, nursing-home programs, work-evaluation units, work-simplification programs and various educational endeavors without having data on the extent of the basic problems.

METHODS

Three methodologic approaches were used in obtaining pertinent data on the cardiovascular experience of Iowa residents.

1. Death certificates for a 10-year period were analyzed to determine the geographic distribution of coronary-disease mortality throughout the State of Iowa.

2. In four successive weeks, copies of a questionnaire (Figure 1) were sent to every physician in the state to obtain data regarding the heart attacks, strokes and rheumatic fever cases that he had diagnosed during the preceding week. The period covered by the survey extended from February 4 to March 3, 1963. When the data were analyzed, it was determined that some misinterpretations of the questionnaire during the first week had led to the inclusion of cases and deaths that had come to the physicians' attention prior to the survey dates. For that reason, only information reported for the three-week period February 11 to March 3, 1963, have been included in the analysis.

3. Data were obtained from a USPHS survey on the history of rheumatic fever, rheumatic heart disease and streptococcal prophylaxis among college freshmen entering Drake University, Iowa

IOWA STATE DEPARTMENT OF HEALTH

Dear Doctor:

Because of the limited amount of knowledge on chronic disease in Iowa, we are trying to obtain data on the incidence of several diseases in the state.

On four consecutive Mondays all physicians in the state will receive this questionnaire. Would you please fill out the following form and return it in the enclosed return envelope. Please fill out the form "none" where you have not seen or do not see the particular type of case.

During the past week, ending Sunday
how many of the following diagnoses have you made. (Not revisits or previously diagnosed cases on which you are consulting.)

1) Rheumatic Fever—total .....
   a) First attack .....
   b) Not first attack .....
2) Cerebral vascular accident (stroke)—total .....
   a) Alive at end of week .....
   b) Not alive at end of week .....
3) Myocardial infarction (heart attack)—total .....
   a) Alive at end of week .....
   b) Not alive at end of week .....
4) County in which you practice .....

The results of this survey will be submitted for publication in the Journal of the Iowa Medical Society. Any one who wishes a copy of the results may have one by putting his name and address on the bottom of this page.

Thank you.

Figure 1. Questionnaire used for a survey of rheumatic fever, cardiovascular disease and myocardial infarctions.

Dr. Lipkind is a commissioned officer in the USPHS Division of Chronic Diseases, Heart Disease Control Program, who was on loan to the Iowa State Department of Health as its acting director of the Division of Gerontology and Chronic Diseases when he made the study reported here.

State University and State College of Iowa between 1956 and 1960.

RESULTS

1. *Coronary Heart Disease.* Table 1 compares death rates in Iowa with those in the whole of the United States. Rates in Iowa for all causes—all cardiovascular diseases and coronary heart disease—are lower than the comparable rates for the entire country in the age group 45-74. The figures compare the adult white U. S. population with the entire adult Iowa population of all races. The relatively insignificant percentage of non-whites in Iowa was not considered separately here or in the data which follow.

Table 2 shows the five highest-rate counties and the five lowest-rate counties in the state for the age group 45-74. The high-rate counties had mortality rates 1½ times to almost 2 times the low-rate counties.

Continuing our examination of the significance of the geographic variations in mortality rates, we examined the age-specific rates throughout the state for males between 55 and 64 years of age (Table 3). The figures show that there were counties where the death rate for coronary heart disease alone approximated or exceeded other counties' death rates for *all* cardiovascular diseases.

In our incidence survey reported in Table 4, 52 per cent of our questionnaires were returned. Unfortunately, we don't have a good index to measure the percentage of cases reported. Therefore, we made estimates of annual incidence, here and in the cerebrovascular-accident table, on the assumption that 100 per cent of cases had been reported. These data are believed to constitute an underestimate of the number of diagnoses made annually. During the last three-week period, 699 acute myocardial infarctions were reported. If it is assumed that there was 100 per cent reporting of myocardial-infarction cases, the estimated annual incidence was 12,115, or 4.3 infarctions per 1,000 population per year.

2. *Cerebrovascular Disease.* In Iowa, the Division of Vital Statistics of the State Department of Health records approximately 4,000 deaths per year from cerebrovascular disease. The age-and-sex adjusted mortality rate in the entire state for both sexes over the age of 25 is 84.4 per 100,000 population per year. A review of the cerebrovascular-accident death certificates in Iowa reveals that approximately 60 per cent could be assigned to hemorrhage, and 40 per cent to thrombosis or embolus.

The cerebrovascular-accident portion of our incidence study is reported in Table 5. Seven hundred fourteen cerebrovascular accidents were reported. If one assumes 100 per cent reporting of actual cases, the estimated annual incidence is 12,380, or 4.4 per 1,000 population per year.

3. *Rheumatic Fever.* Table 6 shows the results of the rheumatic-fever portion of our survey. Because we weren't sure how many of the actual cases had been reported, the figures represent a minimal estimate. We calculated them using 100 per cent for the percentage of actual cases reported in the study, and 10 per cent for the February percentage of the annual total. The table indicates that a minimum of 2,710 diagnoses per year are made. Of those, over half are diagnosed as recurrent attacks.

DISCUSSION

It has been said that medical knowledge can be acquired in three principal ways—clinical observation, laboratory experiment, and population study or epidemiology—each being the right way to answer some questions and the wrong way to answer others.[1] It is only in recent years that adequate population studies of cardiovascular diseases have become available. There is still a shortage of trained clinicians, epidemiologists and biostatisticians to collect and to make critical interpretations of the data. The earliest reports deal mostly with mortality rates arrived at from studies of death certificates. When one deals just with death certificates, he must realize that they probably don't reflect morbidity adequately. Also, as regards chronic-disease patients, the lack of specific diagnostic tests lead to questions about the accuracy of reporting and to problems of classification of deaths. There also are problems of sampling errors in studies of small populations that haven't been observed for long enough periods of time, of using crude rates in the absence of age-specific rates, and of death certificates' failing adequately to reflect the relationship between age at death and age at the time of the initial attack.

Although the data derived from death certificates may leave much to be desired, in the absence of specific morbidity and case-fatality data, analyses of mortality trends supply only indirect evidence of differences or changes in incidence, or advances in therapeutic procedures. These data, however, can serve as a guide in the development of such current studies as the relationship of cardiovascular disease to etiologic factors such as diet, physical activity, hard water and magnesium content of water.

1. *Coronary Heart Disease.* When one reviews the available literature regarding mortality rates,[2-5] he finds the following:

a. Real geographic differences are apparently present, and geographic patterns of mortality are similar; i.e., areas with high coronary-artery-disease death rates also generally have high cardiovascular-disease death rates and high total death rates.

b. Population counts and total death counts are accurate.

c. Autopsy studies show that errors in cause-of-

death entries are compensatory, so that in major groupings such as cardiovascular disease or coronary artery disease, the net errors are less than 7 per cent.

d. The more internists there are in an area, the higher is the rate of reported deaths from coronary-artery disease.

e. Migration may not be so important a factor as is the state in which the patient was a resident at the time of his death.

The low-rate-mortality areas are reported as the Midwestern Plains and a few Middle Southern areas. The high mortality areas are the East Coast and some of the Gulf Coast and Great Lakes states. The male death rates are higher than the female rates, although the female rates in some of the high-rate areas are greater than the male death rates in the low-rate areas.

The mortality rates in Iowa as a whole are lower than the average mortality rates for the country (Table 1). The same is true for death rates for all cardiovascular diseases and for total death rates.

TABLE 1

DEATH RATES* PER 100,000 POPULATION FOR SELECTED CAUSES, AGES 45-74, IN IOWA 1951-1960, AND THE UNITED STATES 1950-1959

	Coronary Heart Disease	Total Cardio-vascular Diseases	All Causes
Iowa (1951-1960)	482	832	1,484
United States (1950-1959)**	558	966	1,716

* Rates have been aged-and-sex-adjusted by 10-year age groups, using the total U. S. population in 1950 in the age groups 45-74 as a standard population.
** For white population only.

There is a wide range of mortality rates from county to county, as is shown in Table 2. The high-rate counties have rates 1½ to 2 times those of the low-rate counties. Except for Emmet, the high-rate counties contain cities, and therefore have more urban populations. These findings are similar to other data is showing higher rates in urban populations.[5]

Table 3 gives 10-year, age-specific death rates for males from coronary heart disease in selected high- and low-rate rural counties. These figures demonstrate that there are areas in the state where the death rates from coronary-artery disease exceed the death rates from all cardiovascular diseases in other parts of the state. These differences appear to be significant and cannot be attributed entirely to relative inaccuracy in identifying and reporting the actual underlying cause of death. We don't know what factors are responsible for these differences, but there are epidemiologic studies in progress in other states seeking to explain significant geographic variations in mortality rates.

TABLE 2

DEATH RATES FROM CORONARY HEART DISEASE IN IOWA, AGES 45-74, 1951-1960

Lowest Rate Counties	
Clarke	314 per 100,000 population
Wayne	322 per 100,000 population
Audubon	323 per 100,000 population
Monroe	330 per 100,000 population
Lucas	340 per 100,000 population
Highest Rate Counties	
Wapello	588 per 100,000 population
Polk	581 per 100,000 population
Emmet	567 per 100,000 population
Pottawattamie	555 per 100,000 population
Scott	553 per 100,000 population

TABLE 3

DEATH RATE FOR WHITE MALES, AGES 55-64, PER 100,000 POPULATION FROM CORONARY HEART DISEASE AND ALL CARDIOVASCULAR DISEASES IN SELECTED HIGH- AND LOW-RATE COUNTIES (1951-1960)

Low-Rate Counties	Coronary Heart Disease	All Cardiovascular Diseases
Clarke	431	775
Monroe	508	939
Page	630	932
Lucas	574	992
High-Rate Counties	**Coronary Heart Disease**	**All Cardiovascular Diseases**
Humboldt	943	1,304
Clay	880	1,234
Hamilton	846	1,145
Hardin	845	1,210

There is always a question of how well mortality data reflect morbidity rates. The results of the coronary-artery-disease portion of our morbidity survey are given in Table 4. Although there are no similar surveys for entire populations, the annual incidence of 4.3 myocardial infarctions per 1,000 total population (assuming 100 per cent reporting) appears high in comparison with other data that are available. One must realize that these figures presumably don't include initial incidence of angina pectoris, acute coronary insufficiency, and coronary heart disease presenting as either congestive heart failure or arrhythmia. Therefore, they represent only part of the total incidence of clinical coronary heart disease. Even though our

figures may be high, and though we don't know the diagnostic criteria that were used for the cases reported, this is the number of diagnoses that are being made, recorded and reported to patients.

TABLE 4

ESTIMATED INCIDENCE OF ACUTE MYOCARDIAL INFARCTION IN IOWA

1. Questionnaires sent to physicians	8,676
2. Questionnaires returned	4,551 (52%)
3. Number of acute myocardial infarctions reported during 3-week period	699
a. Estimated annual incidence	12,115
b. Estimated incidence per 1,000 population per year	4.3

2. *Cerebrovascular Disease.* Studies of cerebrovascular disease[6-9] offer very little information as to the incidence and prevalence of cerebrovascular accidents, but provide data as follows. In 1962 there were approximately 197,000 reported deaths in this country from cerebrovascular disease, and it is estimated that 1,000,000 or perhaps 2,000,000 people were disabled by cerebrovascular disease. Of hospitalized patients with cerebrovascular accidents, 25 to 40 per cent die, 60 to 70 per cent of the survivors have spontaneous and relatively rapid recoveries, and 30 to 40 per cent remain severely disabled. Autopsy series show that 70 to 80 per cent of cerebrovascular accidents are due to thrombosis; from 5 to 22 per cent to emboli; and from 8 to 15 per cent to hemorrhage. A Kansas City study showed a cerebrovascular-accident prevalence of 1.2 per 1,000 population, and a report from Saskatchewan showed that 2.4 of every 1,000 hospital discharges were patients treated for a cerebrovascular accident.

In Iowa there are approximately 4,000 deaths per year from cerebrovascular disease. The mortality rate in the entire state for both sexes aged 25 and over (age-and-sex-adjusted by the direct method to the entire U. S. population, all ages, in 1940) is 84.4 per 100,000 per year. That rate is essentially comparable with the 1949-1951 published rates,[10] and for all races in both the U. S. and Iowa it was slightly higher than the one reported in the present study. However, the rate for the white race in the U. S. in 1949-1951 was slightly lower than the Iowa rate. Thus, when consideration is given to the age-and-sex distribution, the stroke death rate for Iowa's population is similar to that for the U. S. as a whole.

In Iowa, the age-and-sex-adjusted cerebrovascular death date for the age group 45-74 is 175 per 100,000, compared to the 482 per 100,000 coronary-artery-disease deaths reported on earlier for the same age group. The cerebrovascular-disease mortality is slightly more than one-third of the coronary-artery-disease mortality.

It is interesting that a review of cerebrovascular accident death certificates in Iowa reveals diagnoses of 60 per cent hemorrhage, and 40 per cent thrombosis or embolus. We don't know why this is contrary to the autopsy and incidence studies reported by others in this country, but it should be very important to document this difference between the reported studies from large hospitals and university centers, on the one hand, and from local communities, on the other.

Our incidence survey on cerebrovascular accidents, reported in Table 5, shows a rate of 4.4 per 1,000 population per year, assuming 100 per cent reporting by physicians. This appears quite high, and certainly it is higher than the estimates available from other states. Even though the validity of the criteria used throughout the state in making these diagnoses may be questioned, once again we can presume that these diagnoses are actually made, put into medical records, and told to the patients and their families.

There is little known about the comparative incidences of myocardial infarctions and of cerebrovascular accidents. It is quite interesting that in Iowa, physicians are diagnosing somewhat more cerebrovascular episodes than myocardial infarctions. These figures also should be further documented, and efforts should be made to obtain information as to the clinical courses of these patients with cerebrovascular disease, particularly in relation to their need for and utilization of acute and chronic hospitalization, nursing homes, home care and rehabilitation programs.

TABLE 5

ESTIMATED INCIDENCE OF CEREBROVASCULAR ACCIDENTS IN IOWA

1. Questionnaires sent to physicians	8,676
2. Questionnaires returned	4,551 (52%)
3. Number of cerebrovascular accidents reported during 3-week period	714
a. Estimated annual incidence	12,380
b. Estimated incidence per 1,000 population per year	4.4

3. *Rheumatic Fever and Rheumatic Heart Disease.* Since neither rheumatic fever nor rheumatic heart disease is a reportable disease in Iowa, adequate figures for a comparison of incidences are difficult to obtain and evaluate.

Our study findings (Table 6) indicate that there are a minimum of 2,710 diagnoses per year of rheumatic fever in Iowa. According to Dr. John MacQueen, at the University of Iowa,[11] rheumatic fever runs a fairly orderly and predictable course, and the disease can be favorably altered by a pro-

gram of prophylaxis. Although we don't know the criteria used in making the diagnoses reported in the survey, we can again presume that the diagnoses are made, put into medical records, and given to patients and their families. The evidence presented by the rheumatic-fever registry and prophylactic programs in Iowa and elsewhere has indicated that prophylaxis can, indeed, prevent most recurrences of rheumatic fever. Figures from our survey indicate that more recurrent cases than initial cases of rheumatic fever are being diagnosed here in Iowa. These figures should be further documented, and the practice of physicians in the state in using prophylaxis should be known. It's not clear why there should seem to be such a high recurrence rate throughout the state, as compared with rates reported from medical centers and rheumatic-fever registers. It should be noted that of the minimal new number of diagnoses made per year (1,230), only about 225 are enrolled in the Crippled Children's Service rheumatic-fever registry and prophylaxis program.

Table 7 contains further statistics in regard to rheumatic fever and the use that is being made of prophylaxis. It consists of unpublished material from a USPHS survey of college freshmen throughout the country, including the State College of Iowa, Iowa State University and Drake University. For the percentages reported, the figures for the U. S. aren't significantly different from those for Iowa. Less than half of this selected group in Iowa with histories of rheumatic fever had ever been on prophylactic medication, and only 12 per cent were receiving prophylaxis at the time they entered college.

These figures from our own study and from the USPHS study show the need for further information and for more intensive lay and professional education. The possibility of extending the rheumatic-fever registry and follow-up program to all parts of the population, instead of just to those served by the Crippled Children's Services, should be explored. A clarification might result as to the differences between data obtained from the current program and from our survey.

4. *Conclusions.* There has been considerable publicity about Iowa's having the highest percentage of people over 65 years of age in the country. We often hear that its ranking must mean that its people are very healthy, and therefore that there is little need for community concern and program development for chronic diseases. That point of view fails to take into account that many young people are leaving the state, and that because the population is small and distributed over a relatively large area, the geographic density of disease is considerably less than is observed in more populous areas. The fact that there is less disease per square mile doesn't reflect morbidity rates for the population itself. Uncertainty as to the need for community health service programming in chronic diseases based on the above is fallacious. Rather, the information that has been reported here regarding morbidity and mortality, and the fact that the construction of hospitals, nursing homes

TABLE 6

ESTIMATED RHEUMATIC FEVER INCIDENCE IN IOWA

1. Questionnaires sent to physicians	8,676	
2. Questionnaires returned	4,551 (52%)	
3. Rheumatic Fever:		
	Initial Attacks	Not Initial Attacks
Number cases reported	92	111
Estimated number per year (Minimum)	1,230	1,480
Rate per year per 1,000 population	.44	.53

TABLE 7

SELECTED STATISTICS OF COLLEGE RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE 1956-1960

	U. S. Total		Iowa Total	
I. Prevalence	Number	Rate per 1,000 Examinations	Number	Rate per 1,000 Examinations
Total examinations	517,129		13,620	
Definite or probable rheumatic fever or rheumatic heart disease from medical history or physical examination	9,044	17.5	302	22.2
Diagnosed definite or probable rheumatic heart disease	2,971	5.7	101	7.4
II. Prophylaxis	Number	Per cent	Number	Per cent
Students with a need for prophylactic medication on basis of medical history	9,044	100.00	302	100.0
1. Ever on prophylaxis	4,583	50.7	138	45.7
2. Currently on prophylaxis	1,101	12.2	37	12.3

and custodial homes continues at a rapid rate constitute evidence that cardiovascular and other chronic diseases should be a community concern. We can also expect these diseases to be more of a problem in the future because of the increasing size of the older population.

The figures on coronary heart disease, cerebrovascular disease and rheumatic fever that were presented earlier probably raise more questions than they answer, but they are the only figures we now have here in Iowa. They are tabulated on a county-by-county basis at the State Department of Health, and they are available to interested physicians. Hopefully, they may give some impetus to the undertaking of more epidemiologic studies in Iowa. They may also serve as a stimulus for the further development of community health programs, particularly in the fields of nursing homes, home care and rehabilitation. They also indicate areas where professional and lay education might be expanded. Emphasis must also be placed on the major problem of providing these programs for rural areas.

SUMMARY

Data have been presented regarding morbidity and mortality from coronary heart disease, cerebrovascular disease and rheumatic fever in Iowa.

The death rate from coronary heart disease is 482 per 100,000 per year among Iowans 45-74 years of age. There appear to be significant geographic variations within the state which are unexplained by our present knowledge of the diseases. In Iowa, physicians diagnose at least 4.3 myocardial infarctions per 1,000 population per year.

Approximately 4,000 Iowans die annually from cerebrovascular accidents. There are at least 4.4 cerebrovascular accidents diagnosed per 1,000 population per year in Iowa.

At least 2,700 diagnoses of rheumatic fever are made annually, and of those, over one-half are diagnosed as recurrences. In a group of college freshmen with histories of rheumatic fever, fewer than one-half had ever been on prophylactic penicillin, and only 12 per cent were still on it when they entered college.

Hopefully, these figures will give impeteus for more epidemiologic studies, as well as for the development and expansion of community services for the aging and chronically ill.

REFERENCES

1. Morris, J. N.: Epidemiology and cardiovascular disease of middle age. Mod. Conc. Cardiov. Dis., **29**:625-632, (Dec.) 1960.

2. Sauer, H. I. and Enterline, P. E.: Are geographic variations in death rates for cardiovascular diseases real? J. Chron. Dis., **10**:513-524, (Dec.) 1959.

3. Enterline, P. E. and Stewart, W. H.: Geographic patterns in deaths from coronary heart disease. Pub. Health Rep., **71**:849-855, (Sept.) 1956.

4. Sauer, H. I.: Epidemiology of cardiovascular mortality—geographic and ethnic. Amer. J. Public Health, **52**:94-105, (Jan.) 1962.

5. Enterline, P. E., Rikli, A. E., Sauer, H. I. and Hyman, M.: Death rates for coronary heart disease in metropolitan and other areas. Public Health Rep., **75**:759-766, (Aug.) 1960.

6. Wright, I. S.: Strokes, diagnosis and modern treatment: I. Diagnosis. Mod. Conc. Cardiov. Dis., **28**:519-523, (Apr.) 1959.

7. Department of Public Health: Annual Report of the Saskatchewan Hospital Services Plan, 1960 and 1961, Regina, Saskatchewan, 1960 and 1961.

8. Peterson, W. A.: Kansas City Rehabilitation Experiment: service and cost analysis: final report, Kansas City, Mo., Community Studies, Inc., 1961.

9. Groch, S. N., McDevitt, E. and Wright, I. S.: Long-term study of cerebral vascular disease. Ann. Intern. Med., **55**:358-367, (Sept.) 1961.

10. National Office of Vital Statistics: Death Rates for Selected Causes by Age, Color, and Sex: U. S. and Each State, 1949-51. Vascular Lesions Affecting the Central Nervous System. Vital Statistics Special Reports, **49**:463-477, (Apr. 27) 1959.

11. MacQueen, J. C. and Ehmke, D. A.: Management of rheumatic fever. J. Iowa Med. Soc., **53**:191-197, (Apr.) 1963.

Otolaryngology for the General Practitioner

MEDICAL AMPHITHEATER, UNIVERSITY HOSPITALS
IOWA CITY

Friday, October 1, 1965

9:05 a.m. SYMPOSIUM ON BLEEDING IN OTOLARYNGOLOGY
"Epistaxis"—Leslie Bernstein, M.B., B.Ch., B.D.S.

"Pharyngeal (Tonsillectomy, etc.) Bleeding"—D. A. Shumrick, M.D.

"Topical and Systemic Chemical Agents Used for Bleeding"—W. E. Litton, M.D.

"Surface Bleeding (Lacerations, tumor bleeding, hematoma, etc.)"—W. C. Huffman, M.D.

"Bleeding From the Ear"—Dr. Litton

11:00 a.m. "Modern Drug Therapy in Otolaryngology" —Dr. Bernstein

12:00 m. QUESTIONS AND ANSWERS

12:30 p.m. LUNCH

1:30 p.m. TELEVISED DEMONSTRATIONS
1. The Orderly Tracheotomy
2. The Emergency Tracheotomy
Julio Quevedo, M.D., Dr. Shumrick and Dr. Huffman

2:45 p.m. "The Surgery of Deafness"—B. F. McCabe, M.D.

3:30 p.m. CONSULTATIVE CLINIC (Guests are invited to bring their problems—whether patients, x-rays, test results or just histories.)

Maternal Deaths

Iowa, 1952-1961

MADELENE M. DONNELLY, M.D., M.P.H.
Des Moines

A SUMMARY OF NATAL STATISTICS for the 10-year period 1952 through 1961 shows that there was an overall maternal death rate of 4.0 per 10,000 total births in Iowa. For that period, 350 maternal deaths were reviewed, and it was felt that 259 of them had been related directly to pregnancy. During those 10 years, the maternal death rate fluctuated from a low of 2.5 to a high of 5.8.

As an introduction to this discussion, a few demographic facts should be reviewed. The problems of non-white mothers greatly increase the hazards of maternity, but since the non-white population in Iowa is less than 1 per cent, those special difficulties offer no threat to the death rate here. There are only two or three hospitals in the state where enough patients are of the lower socio-economic levels to influence death rates. More than 99 per cent of Iowa mothers are delivered in licensed hospitals. It must be admitted that some of the very small hospitals aren't equipped to handle emergencies, and that occasionally complications occur in the small hospitals that cannot be treated properly there.

Prenatal care may not be adequate, even though the mother reports for care early in her pregnancy. Frequently, when the report of a case is reviewed as a possible maternal death, the section on prenatal care contains no information, either because the patient failed to report for such care or because the information was not recorded.

Twelve per cent of Iowa mothers are under 20 years of age; 8.5 per cent are between 35 and 39; and 2.5 per cent are 40 years of age or older. When maternal deaths are checked by age of mother, it appears that there is a definite increase in death rate with the increase in age (Table 1). It must be pointed out that when rates are computed on an annual basis and there have been only 30 or fewer deaths, the rates aren't very reliable. The rates for the 10-year period, however, should be quite reliable.

One-fourth of all babies born in Iowa are first babies, and one-third are fourth or higher in the birth orders of their respective families. The maternal death rates for first, second and third births are less than the total rate, and for fourth deliveries and beyond, the rate is 5.5 per 10,000 total births. The correlation is not so marked as is the

Dr. Donnelly is director of the Division of Maternal and Child Health, in the State Department of Health.

TABLE 1

MATERNAL DEATH RATE BY AGE—BY YEAR
PER 10,000 TOTAL BIRTHS
IOWA 1952-1961

	Age						
Year	-20	20-24	25-29	30-34	35-39	40+	Total
1952	0.0	2.3	4.2	4.3	10.9	19.2	4.1
1953	3.3	3.8	5.4	6.1	12.5	17.3	5.8
1954	0.0	3.7	3.8	8.8	14.1	17.2	5.4
1955	4.6	1.4	3.3	13.0	8.7	6.1	5.1
1956	1.5	2.8	1.7	3.6	8.7	18.8	3.4
1957	0.0	2.3	1.1	2.8	5.2	16.9	2.5
1958	1.4	3.2	2.9	2.9	9.1	19.0	3.8
1959	1.3	3.5	1.7	7.7	9.1	6.0	4.0
1960	2.4	1.3	4.1	1.0	5.3	12.6	2.7
1961	2.4	0.9	3.0	5.1	7.7	18.2	3.2
Total	1.7	2.5	3.2	5.6	9.2	14.5	4.0

TABLE 2

MATERNAL DEATH RATE BY PARITY OF MOTHER
AND BY YEAR PER 10,000 TOTAL BIRTHS
IOWA 1952-1961

	Parity				
Year	0	1	2	3+	Total
1952	4.1	2.1	2.2	8.4	4.1
1953	8.9	1.1	4.3	9.1	5.8
1954	5.0	5.2	2.9	7.4	5.4
1955	5.5	2.4	3.6	7.6	5.1
1956	3.1	0.6	3.8	5.0	3.4
1957	2.5	2.0	1.5	3.3	2.5
1958	1.3	4.1	2.4	4.7	3.8
1959	3.9	2.7	4.0	4.0	4.0
1960	1.9	2.1	3.2	2.6	2.7
1961	1.3	1.4	2.5	5.6	5.5
Total	3.8	2.4	3.0	5.5	4.0

TABLE 3

CAUSES OF MATERNAL DEATHS
IOWA, 1952-1961

	Total Cases		Preventable		Non-Preventable		Questionably Preventable	
A. All Hemorrhages								
1. Post-partum	38		37		1			
2. Abruptio Placentae	12		9		3			
3. Placenta Previa	5		4				1	
4. Ectopic Pregnancy	16		14		1		1	
5. Ruptured Uterus	12		12					
6. Other	2		1		1			
		85		77		6		2
B. Toxemia								
1. Pre-eclampsia	6		3		3			
2. Eclampsia	14		11		2		1	
3. Post-partum Eclampsia	4		3				1	
4. Eclampsia with H.V.D.	17		7		6		4	
5. Pyelonephritis with Eclampsia	1				1			
		42		24		12		6
C. Sepsis								
1. Puerperal	29		6		17		6	
2. Non-puerperal	8		4		1		3	
		37		10		18		9
D. Systemic Disease								
1. Acute	6		1		4		1	
2. Chronic	11		3		8			
		17		4		12		1
E. Abortion								
1. With Sepsis	6		6					
2. Without Sepsis	4		4					
3. Hydatid Mole	2		1		1			
		12		11		1		
F. Cerebral Hemorrhage in Pregnancy		10		1		7		2
G. Anesthesia		11		9		2		
H. Suicide		4		3				1
I. Embolic Phenomena		18		1		15		2
J. Cardiac Diseases								
1. Congenital	6		2		2		2	
2. R.H.D.	10		5		5			
3. Other	5		2		1		2	
		21		9		8		4
K. All Others		2		1				1
TOTALS		259		150		80		28

Total Births—650,095

TABLE 4

MATERNAL DEATH RATES
BY CAUSE OF DEATH
PER 100,000 TOTAL BIRTHS

	Cause of Death			
	4 Leading Causes of Death			
By Yr.	Hemorrhage	Toxemia	Sepsis	Cardiac
1952	18.2	9.1	4.6	1.5
1953	17.1	9.3	14.0	7.8
1954	13.9	12.4	6.2	1.5
1955	10.7	7.7	7.7	6.1
1956	15.4	0.0	6.2	4.6
1957	6.1	6.1	4.6	3.1
1958	14.1	6.3	3.1	0.0
1959	15.2	4.6	4.6	3.0
1960	12.2	3.1	1.5	1.5
1961	7.7	6.2	4.6	3.1
Total	13.1	6.5	5.7	3.7
By Age				
-20	1.4	4.3	0.0	2.9
20-24	5.4	4.1	4.5	3.2
25-29	7.9	6.8	3.9	1.7
30-34	21.2	5.5	7.4	4.0
35-39	41.4	14.4	10.8	3.6
40+	73.0	18.2	3.2	12.2
Total	13.1	6.5	5.7	3.2
By Parity				
0	7.0	10.1	5.1	7.0
1	6.8	4.4	1.9	1.9
2	9.9	1.5	4.6	2.3
3+	23.2	7.6	9.6	2.0
Total	13.1	6.5	5.7	3.2

case between age and death rate, but there is a definite increase of death rates with the increase in the parity of the mother (Table 2).

The causes of death are listed in Table 3. Hemorrhage continues to be the leading cause of maternal death, and toxemia, sepsis and cardiac disease are the next three leading causes.

Table 4 gives the maternal death rates by cause, for the individual years in the decade, and by age and parity of the mother. In this tabulation, the rates are figured per 100,000 total births, rather than per 10,000.

Many professional people feel that statistics and charts are a waste of time, but it is hoped that everyone will look for the picture that these tables portray. Certainly, high-risk areas can be identified from them. The mother who is having her first baby, the mother past 30 years of age, and the mother who has already had three children are the women for whom the danger is greatest. The perinatal death rates follow the same pattern. Women of those same age and parity groups are more likely to have premature deliveries. Care for mothers in these high-risk groups must be improved and concentrated upon. In these tables every physician who practices obstetrics should find many warning signals. In consequence, he should be alert when a mother in any high-risk group presents herself for prenatal care.

Governor's Conference on Children And Youth

On Thursday, September 30, 1965, Governor Harold Hughes, in cooperation with the Iowa Commission on Children and Youth, will convene the 15th State Conference on Children and Youth at the Memorial Union, Ames. This will be a special treat because the theme deals with the problems of preparing youth for the years immediately ahead, to be discussed by Mrs. Evelyn Millis Duvall, one of the nation's most outstanding authorities on family life and training of youth. She is an author and lecturer well known to many Iowans, who will appreciate the opportunity to share this one-day conference.

The Governor and Mrs. Duvall will present the subjects of the day in the morning, followed by workshops which will have the same questions for discussion, led by excellent leaders from the various areas of service, with resource people from all of the committees of the Iowa Commission on Children and Youth to assist. Mrs. Duvall will bring together the most significant results of the discussions to close the conference.

There will be exhibits in the fields of education, health, welfare, employment, work programs, recreation, spiritual values, etc. and Commission material to take home for further study.

All persons interested in helping youth into useful adulthood in this uncertain world, and in values to live by are invited to attend. A registration of $1.00 is needed to meet conference expenses. High school and college youth are also urged to come. Their registration will be 25 cents. Adults in our communities could contribute much to the success of the conference by actively arranging with youth groups and schools for them to come, assisting with transportation and lunch costs where necessary. Lunch will be served by the Memorial Union at a nominal cost.

Advance registration may be made with Mrs. Elizabeth Palmer, Children's Division, Board of Control, State Office Building, Des Moines 50319.

The Case Against Typhoid Immunizations During Flood Periods

J. H. SUNDERBRUCH, M.D.
Davenport

Historically it has been said that typhoid fever follows floods, but such statements originated before the days of modern sanitation. Even before 1930, Osler said that filth, bad sewers or cesspools cannot in themselves cause typhoid fever, though they furnish the conditions suitable for the preservation of the bacillus.[1]

The advances in detection, treatment and follow-up on all typhoid cases, along with perfected technics for public health follow-up on all typhoid carriers, have caused a marked decrease in cases of the disease.

In Iowa a water-borne typhoid case hasn't been reported in the past 20 years. Seven cases of typhoid were reported in Iowa for 1964. Five of them were reported in Scott County, and the source has not been proved. There are 39 carriers under surveillance in our state, but none are living along the Mississippi River. Minnesota had three cases of typhoid reported in 1964, and no cases had been reported there during 1965, as of May 10.[2] One case had occurred in Minnesota in 1960; five cases in 1961; no cases in 1962; and three cases in 1963. All of these cases were traced to carriers from out of the state or in state institutions. Wisconsin reported two cases of typhoid in 1964.[3] The Wisconsin Health Department has a list of 27 paratyphoid and typhoid carriers who are under surveillance. Only three of its carriers live in counties bordering on the Mississippi River. Illinois reported 12 cases of typhoid or paratyphoid in 1964, and five cases of typhoid or paratyphoid in 1965 as of May 24.[4] One of those cases was in a county that borders the Mississippi River—in East St. Louis.

The sanitary regulations controlling the water supplies of all states bordering the Mississippi are the finest, and therefore it can be expected that under ordinary circumstances all water supplies provided for drinking purposes in those areas are unpolluted. During the Mississippi River flood in April and May, 1965, the greatest amount of water ever recorded is said to have passed either within or outside of its banks. The Corps of Engineers at the Clock Tower on the Rock Island Arsenal stated that 307,000 cubic feet of water passed under the Government Bridge, at Davenport, every second for 24 hours on April 28, 1965.[5] It therefore would seem unreasonable to think that the waters of the Mississippi River could have been contaminated by the bacilli of typhoid or paratyphoid, since there could have been only a small number of patients to contaminate the river waters, and with the extreme dilution that would have had to occur in such an immense flow of water.

It is a known fact that the only means of contracting typhoid is to ingest bacilli through the gastro-intestinal tract, and in order to do this one must consume contaminated food or water. These facts remain true in flooded as well as in non-flooded areas.

Historically, no cases of typhoid fever following floods have been recorded, as evidenced by a survey of the index medicus, the current lists of medicine, and the quarterly cumulative index medicus since and including 1920 and the 1932 volume of index catalogue of the surgeon general's library under "Typhoid."[6] Furthermore, in a personal communication, a nurse who has worked for the Red Cross in floods along the Ohio and Mississippi River Valleys for 25 years has told me she recalls hearing of no known cases of typhoid fever in these areas.

The only article that can be found in the literature relative to this subject appeared in the american journal of public health and this nation's health, Volume XXI, No. 2. Entitled "Water-Borne Typhoid Fever Still a Menace." It was written in 1931 by Wolman and Gorman. The entire article can be summarized in a single sentence: Over three-fourths of the water-borne illnesses reported in the United States during the decade 1920-1929, representing 40 per cent of the outbreaks, were due primarily not to pollution of the raw water at its source, but to defects in the system for collecting, treating, storing or distributing the water for public consumption.

My plea, therefore, is for the medical profession

—and especially our health authorities—to allay all the hysteria accompanying the promotion of typhoid immunization clinics for which there truly is no reason. Furthermore, I make a plea for us to inform and educate the public, and to enforce the best hygiene and sanitation possible during flood times and all other times to protect the public from *all* diseases. To give typhoid immunizations in large numbers is to give a false sense of security. What the public needs is the strictest sanitation to protect people against the endemic hepatitis, dysenteries, and salmonella disease along the Mississippi.

REFERENCES

1. Osler, William: Principles and Practice of Medicine, 11th ed. (revised by Thomas McCrae, M.D.). New York, Appleton-Century Co., 1930, 1236 pp.
2. Personal letter from the Department of Health, Minnesota.
3. Personal letter from the Department of Health, Wisconsin.
4. Personal letter from the Department of Health, Illinois.
5. Verbal communication from the Clock Tower, Rock Island Arsenal.
6. Communication from Iowa State Medical Library.

University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 39-YEAR-OLD WHITE FEMALE, gravida 0, para 0, entered the University Hospitals complaining of progressive exertional dyspnea. The patient stated that she had had rheumatic fever at the age of two years. Afterward she had suffered migratory polyarthritis until about the age of 18. During her childhood she had been kept on restricted activity, and had not been permitted to dance or do exercises more strenuous than walking. Over the past year her symptoms had progressively increased, so that shortness of breath and a tight feeling around the neck occurred whenever she walked for a short distance. During the past several years she had required three pillows at night. She suffered occasional episodes of paroxysmal nocturnal dyspnea and persistent ankle edema. She had been on digitalis for 17 years.

Over the past three months her abdomen had become swollen, and she had experienced some abdominal pain in the right upper quadrant. A referral note from her private physician stated that she had auricular fibrillation and intermittent episodes of pulmonary edema, hepatic congestion, and peripheral edema. She was on digoxin, 0.5 mg./day, hydrochlorothiazide with potassium chloride supplement, and penicillin, 200,000 units/day. Her history revealed three episodes of pneumonia since childhood. She smoked one package of cigarettes per week. Her family history was unremarkable, except for the fact that one cousin had had rheumatic fever. The patient gave a history of a recent 10-pound weight loss with her medical therapy.

On physical examination, the patient was a thin, alert, chronically ill white female with a blood pressure of 118/80 mm. Hg, and with an irregularly irregular pulse of 82/min. Several of her teeth were missing. The chest was clear to percussion and auscultation. Moderate venous distension was noted when the patient lay flat, and there was a slight hepatojugular reflex. Examination of the heart showed enlargement to the anterior axillary line, with no palpable thrill. There was a double pulse in the peripheral arteries, and weak radial pulses and pedal pulses. She had a Grade III harsh systolic murmur, loudest at the base over the right second interspace in the parasternal area, with radiation to the neck and over the precordium. She also had a Grade III blowing diastolic murmur, best heard along the left sternal border and through the apex, and a Grade III harsh systolic murmur radiating into the axilla from the apex. The liver was down 5-6 cm. below the right costal margin, and non-tender. No pedal edema was present. Urinalysis showed a 2+ proteinuria with a specific gravity of 1.028 and five to 10 white cells per high-power field. Sugar and blood were absent from the urine. The blood hemoglobin level was 16.1 Gm./100 ml., and the white blood cell count was 6,950/cu. mm., with a sedimentation rate of 3. The platelet count was over 200,000/cu. mm. Blood urea nitrogen was 18 mg. per cent, with creatinine 1.0, albumin 4.4, and globulin of 3.4 Gm. per cent. Bleeding and clotting studies were unremarkable. An EKG was interpreted as showing atrial fibrillation and digitalis effect. Cardiac fluoroscopy and roentgenograms were interpreted as showing generalized cardiomegaly, with greatly enlarged left

and right atria and biventricular enlargement. Right-side heart catheterization was interpreted as showing evidence of tricuspid stenosis. Left-side heart catheterization through the right femoral artery and selective angiocardiograms were interpreted as showing evidence of aortic stenosis and insufficiency, with mitral insufficiency.

On the afternoon following the femoral artery catheterization, the patient presented signs of acute femoral artery obstruction, and a dislodged femoral intimal plaque was removed by open exploration of the femoral artery. The femoral arterial flow returned to normal following that procedure. Five days later the patient was operated upon, and multiple valvular corrections were performed under extracorporeal circuit. Valvuloplasties were done on the aortic and tricuspid valves, and the mitral valve was replaced with a Starr-Edwards prosthesis.

The patient received penicillin and streptomycin for one week postoperatively. Her course was satisfactory for the first three days after surgery, although chest roentgens showed some enlargement of the cardiac shadow. There also was increased drainage from the chest tube which delayed postoperative anticoagulation. The patient showed an elevated BUN of 70 mg. per cent on the second postoperative day, with a sodium of 127, a chloride of 82, a potassium of 5, and a CO_2 of 27.2 mEq./L. She was placed on heparin on the fourth postoperative day, and was maintained on heparin until Coumadin was started on the eighth postoperative day. The heparin was discontinued the next day. The dosage of heparin was in the range of 75 mg. q. 12 hrs., and the maintenance dose of Coumadin was 5 mg. daily. The prothrombin time was maintained in the range of 21-22, with a control of 12 to 14 seconds. Six days after operation the chest tubes were removed, and at that time the patient showed considerable edema of the right leg, without tenderness in the calf but with pitting edema of both feet and some mottling. Thereafter, she appeared to improve, but she developed a monilial infection of the mouth, which was treated with gentian violet.

On the ninth postoperative day the patient was confused on awakening, but thereafter became better oriented. The confusion was intermittent thereafter. The monilial infection of the mouth proved refractory for over 10 days, and multiple treatments were given, including Bacitracin and silver nitrate locally. During her last week of life, she complained of severe pain in the soles of both feet. On the seventeenth postoperative day she had an emesis, but no other complaints. However on the following day, when she appeared short of breath and apprehensive, and had another emesis, she was started on nasal oxygen. At that time she was found to have moderate rales in both bases, and purulent material emerged from the site of her left chest tube drainage tract. Thirty-five cubic centimeters of thick, green, purulent material was evacuated from it. Two days later the patient complained of nasal irritation, and then suddenly complained of vertigo, threw her head back, and died almost instantly.

CLINICAL DISCUSSION

Dr. S. E. Ziffren, Surgery: Mr. Benson will present the case for the students.

Mr. W. Benson, junior ward clerk: The diagnosis of rheumatic fever may be open to some doubt because of the early onset, but the patient did have the polyarthritis and the typical valvular involvement of rheumatic fever. Whatever the cause of her valvular deformities, she did come to operation after 17 years of congestive failure and atrial fibrillation of unknown duration, which had not been controlled by digitalis and chlorothiazide.

Our group feels that the postoperative course was complicated by a Candida infection and an empyema probably caused by Pseudomonas. We also feel she had a pericarditis with effusion, because of its high incidence following open heart surgery and because of the enlargement of the cardiac shadow postoperatively.

We think the most likely cause of her death was a massive pulmonary embolus, because (1) she was in atrial fibrillation, (2) she had undergone cardiac surgery with disruption of endocardial continuity, valvuloplasty and valvular prosthesis, and (3) she hadn't been put on anticoagulants until the fourth postoperative day, and thus there had been ample time for thrombi to form, especially in the presence of atrial fibrillation. Perhaps emboli to the legs caused the plantar pain. However, we could not rule out cardiac rupture, either of one of the incisions or of the dilated heart muscle itself. We think that in her debilitated state, healing at the incisions may have been retarded, and rupture on the twentieth day would have been reasonable.

We also considered cerebral embolism because of the uncinate fit and vertigo. We felt that it was a less likely cause of her death than pulmonary embolism, because there was no lapse of consciousness, hemiparesis, or other localizing neurologic findings, and because her death was so sudden. We also considered asystole and ventricular fibrillation, but discarded these diagnoses because of the lack of other evidence of uremia or hyperkalemia. Moreover, we are under the impression that people who die of asystole or fibrillation are more apt to die quietly than dramatically.

We expect the pathologic findings to show evidence of cardiac failure with congestion and fibrosis of the liver, splenomegaly, pulmonary congestion, and dilatation and hypertrophy of all chambers of the heart. The heart may contain thrombi adherent to the wall and/or valves, or free within the atria, and Aschoff nodules may be found. We expect the pathologists will have noted

inflammation and fibrosis of the pericardium. We expect a large pulmonary embolus to have been seen in the lungs, as well as inflammation and consolidation. We expect a report of one or more small emboli in the brain, particularly in the temporal lobe, and perhaps in other vessels including the femoral and renal arterial trees.

Dr. Ziffren: Are there any questions you wish to direct to Mr. Benson? Dr. Warkentin has consented to analyze this case for the staff.

Dr. D. L. Warkentin, Internal Medicine: Although I never saw this patient personally, the case is not an altogether unfamiliar one to me. Trivalvular heart surgery is uncommon enough so that when it occurs, cardiologists for miles around prick up their ears.

In essence, the protocol is the history of a woman with rheumatic heart disease who had cardiac surgery and died of postoperative complications. I'd like to extract several items from the protocol and discuss them in some detail. I think the history and the physical examination leave little doubt that this lady did have rheumatic heart disease, but I think the statement in the history that she had acute rheumatic fever at the age of two should be seriously questioned. I'm sure most of you realize that acute rheumatic fever has its peak incidence between the ages of five and 15, and that rheumatic fever before the age of four is distinctly uncommon. There are isolated reports of acute rheumatic fever which have appeared in newborn infants delivered by mothers who had the acute disease themselves, but they are few and far between. Most of the reports I have read fail to give any statistics for the incidence of rheumatic fever below the age of four.

This patient obviously had had acute rheumatic fever, and she probably had had more than one attack, because we note reports of her varying episodes of migratory polyarthritis up to the age of 18.

The physical examination revealed evidences of congestive heart failure, with a large heart, a large liver and some neck-vein distension, and she had the murmurs of aortic stenosis, aortic insufficiency, and mitral insufficiency. She also exhibited one of the lesser-known physical signs of valvular heart disease, a double pulse. I suspect this was the pulsus bisferiens which has been known since the time of Galen and which is a peripheral pulse with two distinct humps in it. The pulsus bisferiens has been clinically associated with a combination of aortic stenosis and aortic insufficiency.

I think at this time I'd like to the the roentgenograms.

Dr. S. H. Cornell, Radiology: This postero-anterior view of the chest was one of the roentgenograms of the cardiac series. The heart was grossly enlarged. There was a very large right atrium. The barium-filled esophagus was displaced to the right by the enlarged left atrium. The oblique and lateral views showed both ventricles to be enlarged. The lungs were clear, and there was no pleural effusion or pulmonary vascular congestion.

Dr. Warkentin: Do you have any comments about the pulmonary artery segment?

Dr. Cornell: The straightening of the left upper cardiac border suggested some enlargement of the main pulmonary artery. On cardiac catheterization and angiocardiography, the right anterior oblique projection showed that contrast material had been injected into the left ventricle, which was somewhat enlarged. There was considerable regurgitation into a very large left atrium. The catheter was then pulled back from the left ventricle into the aorta, and a significant pressure gradient was found, indicating the presence of aortic stenosis. An injection into the ascending aorta showed some regurgitation into the left ventricle. Thus, aortic stenosis and insufficiency as well as mitral insufficiency were demonstrated. The greatly enlarged right atrium indicated the presence of a tricuspid valvular lesion also.

An anteroposterior roentgenogram of the chest on the day of operation showed that the heart had decreased considerably in size. A Starr-Edwards valve had been introduced in the mitral region. Drainage tubes were present at both bases, and the diaphragm was well seen on each side. Both costophrenic angles were clear.

A series of chest roentgenograms over the next several days showed a gradual change. The heart had enlarged somewhat. There was haziness at both bases, and the diaphragmatic shadow was obscured.

No more chest roentgenograms were taken until shortly before the patient died, but at that time the heart was the same size as on the previous film. Again there was some haziness at the right base, but considerably more density at the left base and extending up along the left lateral thoracic cage. In addition, there were two small air pockets close to the left lateral thoracic cage. The appearance was that of a collection of fluid in the left pleural space. The air pockets were probably related to the evacuation of purulent material from the left chest tube drainage tract.

Dr. Warkentin: The electrocardiogram was not very helpful, in that it showed atrial fibrillation and digitalis effect. The cardiac catheterization data revealed a gradient across the aortic valve of 71 mm. Hg. That indicated a moderately severe aortic stenosis. The angiograms showed both mitral and aortic regurgitation, and right heart catheterization revealed the somewhat unexpected finding of severe tricuspid stenosis. The gradient across the tricuspid valve was approximately 8-10 mm. Hg. That was a large gradient on the right side of the heart, and indicated quite significant obstruction to the tricuspid valve. As I said, this finding of tricuspid stenosis was probably unexpected because there is no mention in the protocol that a

diastolic murmur of mitral stenosis or tricuspid stenosis was ever heard. I think this emphasizes the fact that the clinical recognition of tricuspid stenosis is often quite difficult.

Several facts suggest the possibility of tricuspid stenosis, and raise one's level of suspicion about it. The typical patient with tricuspid stenosis is usually a female who is thought to have rheumatic mitral stenosis and/or associated aortic valve lesions. There is usually a paucity of paroxysmal pulmonary symptoms. This lady had had orthopnea for several years. Nevertheless, the protocol says she had had only occasional paroxysmal nocturnal dyspnea. She had a big, non-tender liver, and a recent history compatible with ascites. In addition, she had been on digitalis for 17 years. Some doctors put patients on digitalis at the drop of a hat, but it is very unlikely that a rheumatic heart disease patient who needs digitalis will go on for 17 years in an uncomplicated course without cardiac surgery or other surgical intervention. It is very possible that her tricuspid stenosis protected her from the usual clinical symptoms of her valve lesions. The typical patient with tricuspid stenosis has a characteristic jugular-venous pulse. This is particularly true if the rhythm is normal sinus. An A-wave in the jugular venous pulse is synchronous with right atrial contraction, and sometimes this A-wave is prominent enough to simulate carotid pulsation. In this patient who had atrial fibrillation, it was obviously impossible to see any A-waves, but it is interesting to speculate that the feeling of fullness in the neck which she developed when she exercised was an evidence of increasing venous pressure due to obstruction at the tricuspid valve. The typical patient with tricuspid stenosis often has aortic involvement, and aortic insufficiency is more common than aortic stenosis.

The most common accompanying lesion, however, is mitral stenosis, and one can go almost as far as to say that if mitral stenosis is not present, then tricuspid stenosis is not present either. It would be interesting to know from the surgeon's comments whether some degree of mitral stenosis was present in this lady at operation. Electrocardiograms in tricuspid stenosis may show right atrial hypertrophy without right ventricular hypertrophy. The roentgenograms of the chest in the P-A projection may show less prominence of the pulmonary artery segment than one would expect. We saw no radiographic evidence of pulmonary hypertension in this lady—i.e., no B-lines of Kerley—and that was my reason for asking my question about the prominence of the pulmonary artery segment. Finally, auscultation reveals that the diastolic murmur increases in intensity with inspiration. The pulmonic second sound is not split in its normal fashion because of obstruction to the inflow through the tricuspid valve.

I think that this lady had significant tri-valvular disease, and consequently that successful surgical intervention required the repair of all of her involved valves. Repair of any one or any two of her valves wouldn't really have corrected her altered hemodynamics. Therefore, she had to go through the rather formidable procedure of an attack on three valves—a tricuspid valvuloplasty, an aortic valvuloplasty, and a replacement of the mitral valve.

There are several events in her hospital course that I'd like to mention. The first of these has to do with the statement about her azotemia two days following operation. I suspect the increased BUN and the low sodium and chloride were probably due to mild secondary renal damage, either from a prolonged perfusion time or from a transfusion reaction. I'd like to ask whether Polybrene or protamine was use to counteract the effects of heparin after surgery.

Dr. J. L. Ehrenhaft, Surgery: It was protamine.

Dr. Warkentin: Polybrene, which is a synthetic neutralizer of heparin, has been shown to cause renal damage in some patients, and I thought it might have been a factor in this case. I assume that the azotemia cleared and played no further part in her illness, since no further mention is made of it in the protocol.

There is a curious statement about burning feet. The patient's complaints of painful soles occurred during the last week of her life. Just in the past few months, a new syndrome has been described which is called dysesthesia pedis, a polite way to say "burning feet." This pain in the soles of the feet usually begins six or eight days following the start of subcutaneous or intravenous heparin therapy. The pain usually occurs two or three hours following a dose of heparin. The pain is extreme, and it seems to be dose related. Was heparin restarted in this patient?

Dr. Ziffren: No, but Coumadin was.

Dr. Warkentin: The pain doesn't seem to have been related to the giving of heparin in this patient. I don't know whether or not heparin was responsible for her symptoms, but I have no other explanation for the pain in her feet. The phenomenon is probably not an allergic reaction. Rather, it seems related to some sort of interference by heparin in normal skin metabolism.

The most common causes of postoperative death in patients with prosthetic cardiac valves of the Starr-Edwards type have been congestive heart failure, infection, and thromboembolic complications. In all published series, the patients in whom these procedures have been attempted have had such troubles, and particularly, they follow the replacement of mitral valves. I think this patient probably had congestive heart failure in the last days of her life. I think her progressive cardiac enlargement was on the basis of congestive heart failure, but I don't believe that it was what caused her demise. Infection, if it occurs, is usually

staphylococcal, and the septicemia during the clinical course usually carries these people off rapidly. I don't think she had a staphylococcal septicemia or a staphylococcal endocarditis.

Thus I am left with the thromboembolic complications, and I'd like to spend a little time on them. With one exception, as far as I know, all of the groups that presently do this type of surgery anticoagulate their patients. There is a cryptic statement in the protocol which says "There also was increased drainage from the chest tube which delayed postoperative anticoagulation." I understand that to mean that the patient was bleeding. The hemorrhagic tendency following cardiac bypass procedures is well known, and certain conditions predispose to it. One of these is severe cyanosis before surgery. Another is the general condition of a poor-risk patient. Massive transfusions, low perfusion rates, and long perfusion and operative times—all these are factors which predispose to bleeding.

The causes of postoperative bleeding are of three main sorts. The pump-oxygenator, with the resulting mechanical disruption of the blood and its constituents, may cause bleeding. The surgeon himself may sometimes fail to secure adequate hemostasis, and postoperative bleeding may occur. The last important cause is coagulation defects. These may be either preoperative or postoperative. We have no evidence that this lady had any preoperative coagulation defects, but postoperatively I assume that she was bleeding, and that was one of the reasons why anticoagulation was delayed. Two mechanisms are postulated for the coagulation defects found postoperatively. The first of these is the surgical release of a plasminogen activator, resulting in the formation of plasmin, with fibrinolysis and defective fibrin polymerization. This is what usually occurs in prostatic-cancer surgery, I am told, and it can be treated with epsilon aminocaproic acid. The second mechanism is the release of tissue thromboplastin as a result of trauma or ischemia during surgery. This results in massive intravascular coagulation, secondary fibrinolysis, and defective fibrin polymerization. Patients of this type may well show clinical evidence of thrombotic complications in the face of bleeding. In a recently reported study, three patients who bled postoperatively showed rapid clotting times for both plasma and whole blood in silicone tubes, a greatly shortened plasma-recalcification time, and greatly increased levels of factor VIII or antihemophilic globulin in the blood. The investigators had the impression that this represented a hypercoagulable state, and that it should be treated with heparin. This they did in the face of active bleeding, and the bleeding promptly stopped.

I suggest in this case, since I think probably no one can prove me wrong, that this lady was in a hypercoagulable state following surgery, and that it resulted in her bleeding. Heparin therapy at that time might have prevented the subsequent thromboembolic complications which I think she had and which I think caused her death. Of course, the usual sequence of thrombosis could have occurred as a result of the delayed anticoagulation, the atrial fibrillation, the largeness of the left atrium, and the prosthesis in the mitral area. These events certainly set the stage for thrombosis.

One last question: Dr. Ziffren, did this lady have any fever or petechiae during her last week of life?

Dr. Ziffren: She had temperatures of 99.6° and 100° F. rectally, during her last few weeks of life. No mention of petechiae was made on the chart.

Dr. Warkentin: This lady had a severe Candida infection in her mouth, which raises the possibility of a systemic fungal infection. There have been 17 reported cases of Candida endocarditis following cardiac surgery, and these appear to have been the result of implantation of the organism on the cardiac valves. The portal of entry has been either cardiac catheterization, the pump oxygenator, or surgery itself. Clinically it acts like subacute bacterial endocarditis, with fever, petechiae, splenomegaly and embolic complications. The clinical manifestations usually have their onset within one month, and most of them have appeared within 12 to 18 days. I don't know whether this lady had Candida endocarditis or not. This may be the "hooker" I've kept looking for, and it is a possibility.

In summary, I think this lady had rheumatic heart disease, tricuspid stenosis, aortic stenosis, aortic regurgitation, mitral regurgitation, and probably mitral stenosis. I think she had an adequate surgical repair. I think she was in a hypercoagulable state, either immediately after surgery or in her early postoperative period, and that she had thromboembolic complications consisting of emboli to the brain, since she had alternating periods of disorientation and confusion. It is possible that systemic thrombosis accounted for the swelling of her right leg postoperatively. I think that she also had thromboembolic complications in her left atrium. The congestive heart failure was probably due to progressive thrombosis in her left atrium. This gradually interfered mechanically with cardiac output and led to congestive heart failure with enlargement of her heart.

There is a statement about a postoperative wound infection. Whether or not empyema was present, I can't say. From the chest x-ray, I suspect that it was. Although a pulmonary embolus can't be ruled out as a cause of death, I suspect that she had a thrombus in her left atrium which either grew large enough or embolized to occlude the orifice of the mitral valve. It is also quite possible that Candida endocarditis or Candida infec-

tion may have been found in the heart at the time of autopsy.

Dr. Ziffren: Are there any questions you want to direct to Dr. Warkentin? Dr. Longnecker will report on the findings at autopsy.

Dr. D. S. Longnecker, Pathology: I shall now document the major portion of Dr. Warkentin's discussion. Since all of the pertinent autopsy findings were either in the heart or related in some way to the heart, I shan't pursue the usual review of systems, but shall organize things in a different fashion. First I'd like to tell you about the evidence we found to support the diagnosis of old rheumatic fever. We did find scarred valves. Relying primarily on the operative findings, we can say that there were mitral insufficiency, mitral stenosis, tricuspid stenosis, aortic stenosis and a little aortic insufficiency. Since the valves had been opened at the time of surgery, we depended upon the operative description for documentation. We found patchy myocardial fibrosis, which we regard as a sign of very old rheumatic myocarditis. We also found patchy endocardial thickening, which we regard as a sign of old rheumatic endocarditis.

We found several changes that we regard as consequences of the valvular disease. There was myocardial hypertrophy involving both the left and the right sides. The heart weighed 520 Gm. There was evidence of chronic pulmonary congestion, which we attribute to the mitral stenosis and insufficiency. There apparently had been long-standing pulmonary hypertension, for there was arteriosclerosis in the pulmonary arteries which exceeded that in the systemic arteries. Another finding related to the chronic valvular disease was a well-developed cardiac cirrhosis attributable to the trivalvular lesions and perhaps most directly to the tricuspid stenosis.

Thus far we have described the findings which were present before surgery. The next matter we shall take up is the state of affairs in the postoperative period. The following description of the heart was abstracted from the autopsy protocol: "The heart appeared diffusely enlarged. The pericardial surface was covered with a fibrinous exudate. Well-healed incisions were noted on the right atrium and in the interventricular groove and aorta. The ventricles contained a small amount of postmortem clot. On opening the left atrium, we saw a large laminated thrombus formed around the superior aspect of the Starr-Edwards valve and adherent to the outer edge of the valve. There were prominent lines of Zahn in this thrombus, and it filled the left atrium and completely occluded the mitral valve. The Starr valve was in good position, and the ball was free to ride up and down within the valve." The repairs of the stenotic aortic and tricuspid valves also were apparently quite successful, and the significant postoperative event, in this case, was thrombosis in the left atrium. The thrombus apparently was oldest at the valve margin, for that is where the thrombus was adherent and showed some evidence of organization. In the atrium, the thrombus was of more recent origin, and probably of extremely recent origin in the area which occluded the valve.

We found a few other changes related to the progressive cardiac failure that had resulted from occlusion of the left atrium. There were 300 ml. of fluid in the right thorax, and 800 ml. in the abdomen. There was a recent splenic infarct, apparently related to an embolus which arose from the developing thrombus. The brain was excluded from examination in this case, so we shan't be able to comment on whether or not there was embolization to the brain.

There was a 200 ml. loculated empyema on the left, and we cultured hemolytic Staphylococcus aureus from that site. There was a pericarditis which apparently was related to the operation and which we think had no significance in the clinical course. We found ecchymoses and petechiae of unknown significance over the trunk and extremities. There was also a chronic cholecystitis which may explain some of the obscure right upper quadrant pain mentioned in the protocol.

In summary, this was a case of chronic rheumatic heart disease with trivalvular involvement. The surgical repair of the lesions had apparently been successful, but the subsequent development of atrial thrombosis had been fatal.

Are there questions?

Dr. W. B. Bean, Internal Medicine: Was the atrial thrombus big enough actually to occlude the passage, or was it simply a large one?

Dr. Longnecker: It appeared to have completely occluded the mitral orifice. Now this, obviously, could not have been a very long-standing situation. I think the thrombus had built up in the region of the valve ring, and then as a terminal event, the blood had clotted in this region.

Dr. W. E. Connor, Internal Medicine: Were there any thrombi in the right heart?

Dr. Longnecker: No.

Student: I'd like to ask Dr. Connor about the hypercoagulability that was postulated.

Dr. Connor: The coagulation lab has been asked to study a number of these patients preoperatively and postoperatively, with regard to the bleeding during or following pump operations, such as has been reported from other parts of the country. It is noteworthy that there has been very little of that problem in this hospital, despite the performance of several hundred such procedures. Candidates for pump operations have had careful preoperative study in order that we might judge the threat posed by any history of bleeding or of coagulation defect. In this type of operation, of course, the patient receives a large amount of heparin, and thus any latent bleeding propensity is greatly enhanced. In addition, reports in the literature indicate the possibility of thrombocytopenia and excessive fibrinolysis. In studies of

patients in this hospital, there have been no consistent coagulation abnormalities.

With regard to the question of hypercoagulability, this state can't usually be detected by current laboratory tests, so that the diagnosis is made on the basis of clinical impression of an actual thrombotic episode. A hypercoagulable state may result when thromboplastic material enters the circulation and initiates clotting. For example, thrombosis was a common occurrence in the early days of pneumonectomy. In the course of manipulation of the lung, lung thromboplastin entered the circulation. Different surgical technics have completely eliminated that problem.

Various coagulation abnormalities have been reported in postoperative patients, though they haven't been consistently or repeatedly found. They include enhanced platelet stickiness and a rise in platelet count, a decrease in the bleeding time, and a shortening of the whole-blood clotting time. Seldom have we been able to demonstrate these or other findings in patients with suspected hypercoagulability.

As for the patient under discussion, my own impression is that the introduction of a foreign material into the flowing blood, in the form of an artificial valve, created the setting for the thrombosis. Until that foreign material could be covered with the body's own tissues—i.e., endothelium—it seems to me that thrombosis would be quite apt to occur. Indeed, it might be expected, to some extent. In experimental animals, the introduction of steel wire or other material into flowing blood soon causes the formation of small platelet thrombi, and they gradually enlarge. So it really is not surprising that thrombosis developed in this patient.

Dr. E. O. Theilen, Internal Medicine: This woman had a very large left atrium. We know that even in a normally-functioning Starr-Edwards valve, there is a small pressure gradient across the valve which might contribute to stasis and clotting. If the size of the atrium were reduced surgically, would the likelihood of postoperative thrombosis within the atrium be decreased?

Dr. Ziffren: Should you like to answer that, Dr. Ehrenhaft?

Dr. Ehrenhaft: The left atrium in such a patient is perfectly enormous, and what Dr. Theilen has said is perfectly true. These patients have chronic fibrillation. There is no atrial contraction, and in the lady whom we are discussing, both atria, right and left, were just receptacles for blood and sites for thrombus formation. We do attempt to reduce the size of the left atrium after valve implants by excising as much atrial wall as possible. The extent of excision is limited by the left pulmonary veins posteriorly, and by the circumflex branch of the coronary vessels anteriorly. Because of the approach that we used, we couldn't do that in this patient. It is possible only if the left atrium is approached through a left thoracotomy.

Dr. Longnecker: I think there would be some question as to whether it would take care of the problem, Dr. Theilen, because one usually finds that the thrombus tends to form at the junction of the prosthesis and the tissue, a point where there is bound to be some irregularity and tissue damage. So I think that thrombosis as a result of stasis is not usually the problem. In this case, I think that the thrombus began in the region of the valve rings, creating a functional mitral stenosis again, and then bringing about stasis and subsequent thrombosis in the atrium. Thus I don't think the thrombus began as a result of stasis.

Dr. Theilen: On the other hand, you seldom see this on the aortic side where the velocity of flow is much higher.

Dr. Longnecker: I looked into this matter of postoperative thrombosis of prostheses, and found that even in cases of aortic-valve replacement, there is some thrombus formed on the ventricular side where there is no stasis at all. There is something about the valve material or the junction of the valve with the endocardium which brings about thrombosis.

Dr. Connor: I should like to ask Dr. Ehrenhaft how long it takes for endothelium to cover the surface of the prosthetic valve. Does endothelium ever grow over it?

Dr. Ehrenhaft: The situation is very complex. The ideal implant to insert in a blood stream in the heart or vessels would be a material which is completely innocuous—one which stays in place, produces no reaction around it, and does not seal with the tissues. However, it is hard to satisfy those criteria. The best available prosthesis today is the Starr-Edwards valve. It consists of a Teflon ring, to be used for sutures, and a highly polished metal surface on the ball cage. The initial extent of the thrombosis should not go beyond or extend over the metal part of the prosthesis, and the endothelium should not extend over the metal part of the prosthesis. The ingrowth of tissue into the mesh should be fairly rapid, just like the healing of any other wound.

Now, the thrombus formation is not entirely limited to mitral-valve replacement. We have built up a fair acquaintance with this complication. Thrombus formation in the left atrium following mitral valvuloplasty or mitral valve replacement has led to obstruction at the mitral valve level in spite of adequate anticoagulation.

The question of anticoagulation comes up in patients with mitral valve implants. Most surgeons are anticoagulating all patients who have had mitral replacements—initially with heparin and later with Coumadin. Most patients with aortic implants are treated similarly, but in my opinion the anticoagulant can be stopped three or four months after implantation, when a good result has been obtained.

The Starr-Edwards valve has a cage, a silastic

ball and Teflon ring. During diastole, the ball slides down in the cage with inflow from the atrium into the ventricle. During ventricular systole, the ball is pushed back up. The ball valve's specific gravity is a little higher than that of the blood. Anticoagulation is extremely vital in those patients, and I do not think that Coumadin is the ideal anticoagulant drug. Blood flows through the aortic area a great deal faster than through the mitral area, and the chance for thrombosis is markedly lessened, even though cases have been reported in which thrombosis occurred and peripheral embolization resulted several months after implantation.

A different type of aortic prothesis is now available which does not require sutures for implantation. It is the McGovern valve. At the prosthetic rim, it has numerous prongs which protrude and catch the surrounding tissue for fixation of the prosthesis. It is very advantageous in that the operative time is greatly reduced when one uses this type of prosthesis, and often a cumbersome coronary perfusion is therefore unnecessary.

ANATOMIC DIAGNOSES

1. Rheumatic heart disease with tricuspid stenosis, aortic stenosis, and mitral stenosis and insufficiency (by clinical history)
2. Myocardial hypertrophy (520 Gm.)
3. Recent tricuspid and aortic valvuloplasty and replacement of mitral valve with a Starr prosthesis
4. Massive thrombotic occlusion of left atrium and Starr valve
5. Pericarditis
6. Loculated empyema, left pleural cavity, with pleurocutaneous fistula
7. Hydrothorax, right (300 ml.)
8. Atherosclerosis of pulmonary arteries
9. Cirrhosis of liver
10. Ascites (600 ml.)
11. Infarct of spleen, recent

STUDENT'S DIAGNOSES

Cardiac failure
Thrombus in heart chambers
Pulmonary embolus
Cerebral emboli
Pericarditis with effusion
Empyema

DR. WARKENTIN'S DIAGNOSES

Rheumatic heart disease with mitral stenosis and regurgitation, aortic stenosis and regurgitation, tricuspid stenosis, surgically corrected.

Hypercoagulation state with thromboembolic complications to brain and occlusion of left atrium and mitral valve, resulting in congestive heart failure.

Possible Candida endocarditis.

Continued Decline in Prices of Drugs

The wholesale price index for ethical pharmaceuticals has declined for the sixth straight year. The index fell during 1964 from a level of 86.2 to an all-time low of 86.0 (1949 equals 100.0). This index, which measures price changes annually, has been prepared by Dr. John M. Firestone, of City College, New York City.

There were an unusually large number of price changes during 1964. Of the 281 items in the index, 39 showed price changes during the year, contrasted with only seven changes in 1963. Of the 39 price changes, 31 were increases and eight were decreases. The decreases—ranging between 10 and 20 per cent—were primarily in items with heavy sales, whereas the increases ranged between three and 14 per cent and were in items of considerably less importance. Thus, the larger downward movement in eight items more than offset the lesser increases in 31 items.

The therapeutic-group index changes since 1949 have been as follows:

Increases	Per Cent	Decreases	Per Cent
Antihistamines	20.6	Antibiotics	62.7
Sedatives	15.0	Hormones	50.0
Analgesics	14.8	Vitamins	8.7
Antispasmodics	12.2	Diurectics	8.0
Cough and Cold	11.4	Anti-arthritics	3.9
Sulfonamides	10.1	Ataractics	3.6
Hematinics	6.6	All others	0.6
Cardiovasculars	1.6		
Dermatologicals	*		
CNS Stimulants	*		

* Less than 0.1 per cent.

This index is designed to measure changes in prices only. It does not show price levels. An index designed to measure price levels would be difficult to construct because of the nature of the products involved. For example, a price which is quoted for the usual package size would have to be converted to the price for a daily dose and multiplied by the average number of days that the drug is used. A price per 100 capsules would be meaningless when compared with a similar price for the drug it replaces. Assuming the new drug is more efficient or effective, smaller doses or fewer days of administration may be required.

As might have been expected, the composition of the index has changed radically over the years. The criterion for inclusion is that the item must have been one of the five leading pharmaceuticals in its group in any year since 1949. Once included, it is retained until its sales decline to relative insignificance. The index for 1949 contained 92 products; by 1964 the total of items had risen to 281. An average of 18.5 products have been added each year, and six products, on the average, have been dropped. From the 92 products in the 1949 list, only 36 were included in 1964.

Editorials

THE NEW VIRUS LABORATORY IN IOWA CITY

The announcement that on July 1 a virus laboratory was opened at the State Hygienic Laboratory, in Iowa City, will be enthusiastically received by physicians throughout the state. Up to this time, it has been necessary to send specimens for the detection of human viral infection to the U. S. Public Health Service laboratories outside the state, and even that service has not been available for the last two years. In the past, results of virus studies often were not received for months after the patient's illness, and aside from satisfying the attending physician's curiosity they produced few practical benefits.

Isolating and identifying the etiologic agent in an outbreak of a disease may facilitate effective preventive measures, and reduce the hazard of an epidemic. It must be noted, however, that the function of the virus laboratory is not to determine the etiologic agent for an isolated case of an obscure and exotic disease, but rather is to determine the specific viral agent causing an outbreak of a malady which is thought to have a viral cause and which has affected a number of patients.

An added benefit which will accrue from our having a virus laboratory in the state is the dissemination of knowledge concerning viruses and viral infections, their classification, and the general nature of infections caused by each of the many viruses. At the present time this is a confusing picture for most physicians. An educational program on this subject could prove very beneficial.

ARE WE OUR BROTHER'S KEEPER?

An article by Frederick Lemere, a Seattle physician, in the March issue of NORTHWEST MEDICINE, contains the statement that approximately one doctor in 25, at some time or other, will succumb either to alcoholism or drug addiction. To those of us who are not thoroughly familiar with the problem, that will appear to be an almost unbelievably high incidence, but there is no question that physicians are sorely tempted, and that when one of them succumbs, we should help in his rehabilitation. The stressful lives which most physicians lead and their easy access to these sedatives makes addiction an occupational hazard for them, and it is proper for both the profession and the individual doctor to face this problem with complete honesty.

Each of us has a fellow physician among his acquaintances who, overwhelmed by a busy practice, dead tired from loss of sleep, overburdened by financial responsibilities, or concerned with family obligations, has turned to alcohol for comfort, for relaxation and for sleep. As pressures mount, his drinking increases until it becomes inadequate and he supplements it by amphetamine during the day and by barbiturates at night. Lemere emphasizes that deterioration from alcohol and drugs is so insidious that the victim fails to realize that he is no longer able to practice adequate medicine. He neglects his patients, fails to keep appointments, and fails to recognize errors in judgment and gross mistakes.

Prompted by compassion, colleagues and nurses do everything possible to protect the afflicted physician and to "cover" for him. They are loathe to interfere until some crisis occurs or some life is placed in jeopardy. They temporize, despite the fact that it is their obligation to step in and initiate procedures to protect the public, the physician and his family, and the profession as a whole.

Throughout the country, Lemere says, official and unofficial disciplinary boards have been created to deal with alcoholism and, particularly, with drug addiction among physicians. Though such a board's primary responsibility is to protect the public, in many instances these groups have made serious efforts directed toward the treatment and rehabilitation of the victims.

Surprisingly, the outlook for a narcotic physician has been found to be better than for an alcoholic one. He may be permitted to continue practice on a probationary basis, though forbidden to prescribe or dispense narcotics. A strong motivation is provided through a threat of medical license-revocation and through a long and close follow-up by the disciplinary board. Psychotherapy is usually necessary, and a lessening of the professional and personal pressures that led to the addiction in the first place is essential.

The alcoholic physician poses a more difficult problem because close supervision and follow-up are more difficult. Alcoholics Anonymous may be helpful, and psychotherapy may be successful in those who are well motivated and who are emotionally stable. Including the alcoholic physician within the purview of the medical disciplinary boards, where he can be under close supervision and where he will face the loss of his license to practice, may produce a higher incidence of recovery and rehabilitation. In the absence of such a disciplinary board, the rehabilitation of an alcoholic physician usually devolves upon the local hospital and its staff members, and at best it is

* Lemere, F.: Alcohol and drug addiction in physicians. NORTHWEST MED., 64:196-198, (Mar.) 1965.

LOMOTIL *Pharmacologic Activity*

The significant pharmacologic actions of Lomotil are summarized as follows:

Evidence indicates that Lomotil acts directly on the intestinal musculature to inhibit excess peristalsis.

Lomotil is not known to inhibit nonpropulsive intestinal movements.

Roentgenograms demonstrate that this activity occurs within two hours after oral administration and persists for at least six hours.

Comparative studies in the rat show Lomotil to be more effective in inhibiting fecal excretion than either codeine or morphine.

Analgesic, anticholinergic, mydriatic and gastric secretory effects have not been significant.

Reduction of propulsive motility with Lomotil relieves spasm and cramping, allows physiologic absorption of fluid and reduces frequency of evacuations to provide prompt, symptomatic control of virtually all diarrheas.

LOMOTIL®

Each tablet and each 5 cc. of liquid contains:

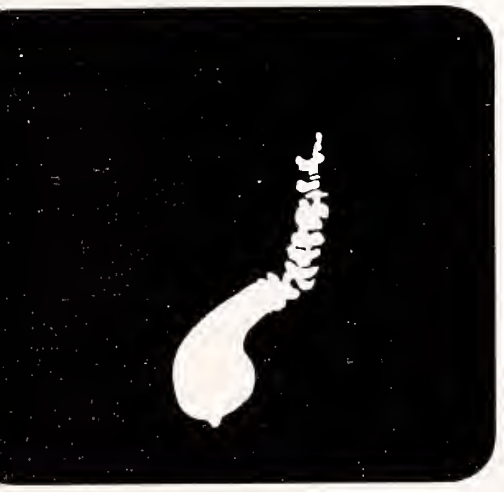
diphenoxylate hydrochloride ..... 2.5 mg.
(Warning: May be habit forming)
atropine sulfate ..... 0.025 mg.

tablets • liquid

slows propulsion

relieves distress

stops diarrhea



Precautions: Lomotil is an exempt narcotic preparation of very low addictive potential: more than three million prescriptions have now been written for Lomotil. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect—Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:

3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults:

20 mg. (2 tsp. 5 times daily or
2 tablets 4 times daily)

**Based on 4 cc. per teaspoonful.*

Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

Editorials continued...

not a well directed or well controlled program.

Committees having the function of protecting the public exist under various titles in hospital staffs, and in county and state medical societies. State boards of health or of medical examiners can deprive a physician of his license, for cause. But these groups rarely act in such matters, for it is seldom that anyone assumes responsibility for initiating action against a colleague. In failing to face the realities of the situation and in procrastinating, we render a disservice to everyone concerned. Indeed, we should do something at the hospital-staff or local-medical-society level, long before the problem can come to the attention of a disciplinary committee that threatens the offender with loss of his license.

Lemere emphasizes that "every physician must guard against the easy escape from emotional problems afforded by alcohol and drugs, by thinking of his family, his future, his obligations to his patients, and his pride in his profession."

AVOIDANCE OF CATHETER INFECTIONS

A report of a comparative study in three Seattle hospitals on the incidence of urinary-tract infections in previously uninfected patients who required indwelling catheters* indicates that by meticulous adherence to aseptic technics infection can be prevented in the great majority of patients.

The study consisted of a review of the histories of all patients requiring indwelling catheters on the urological services of three large hospitals during an 18-month period. Urine cultures, colony counts and sensitivity studies were procured before, during and after catheterization. At University Hospital a closed drainage system was employed. At the King County Hospital the method of drainage was semi-closed, and 30 ml. of 10 per cent formalin was added to each drainage bottle. At the Seattle Veterans Hospital, open drainage devices were used. Semi-closed drainage consisted of a bottle with an unsealed vent less than 4 mm. in diameter. Open drainage devices had unsealed vents greater than 4 mm. in diameter.

Patients included in the study were those whose urine cultures before catheterization had not been significant, and who had cultures during and after catheter drainage. Patients in whom the last culture had been taken less than one week after all antibiotics were discontinued were eliminated from the study. Colony counts of 10^5 per ml. in a clean voided specimen or 10^3 per ml. in a catheterized specimen were considered significant.

Catheterization was longest at the University Hospital, where the average was 16 days. The median duration of four days was the same at all hospitals. Patients at the University Hospital were younger than those at the other two hospitals, and their urinary problems were more complicated than were those of patients at King County or the V. A. Hospital. Most of the University Hospital patients had two indwelling catheters, whereas at the other hospitals the patients usually required a single catheter.

An analysis of the records revealed that only one of the 30 patients on closed drainage, or 3 per cent, at the University Hospital developed infection following the use of an indwelling catheter. In the series of 31 patients at King County Hospital on semi-closed drainage, eight or about 25 per cent developed infection. At the Veterans Hospital, where drainage receptacles were open to the air, 22 of 33 patients, or 67 per cent, became infected.

The author asserts the study demonstrated that infection is not a necessary hazard in bladder drainage by indwelling catheter. But so as to prevent infection, the following directions must be very carefully observed:

1. Meticulous asepsis and gentle, atraumatic technic must be used in passing the catheter.
2. One must use the smallest catheter sufficient to do the job.
3. One must employ bacteriologically sealed drainage systems with antiseptic in the collecting bottle to prevent growth of any possible contaminant.
4. Continuous egress of urine and a high fluid intake must be maintained.
5. If irrigation is required, a closed system is best.
6. Prophylactic use of antibiotics may be valuable when brief drainage is anticipated. Prophylactic antibiotics for prolonged drainage may be detrimental.

For aseptic catheterization, the successive steps are as follows:

1. To insure patient cooperation, establish good rapport by means of a simple explanation, and follow it by unhurried, purposeful and reassuring action.
2. Wash the meatus gently and thoroughly with a mild antiseptic (soap and water, pHisoHex, aqueous Zephiran).
3. Wear gloves, or pass the catheter with an instrument. Do not handle the catheter with your bare hands.
4. Lubricate the urethra generously. Inject 10 to 15 ml. of water-soluble lubricant directly into the urethra.
5. Be gentle.

It cannot be emphasized too strongly that the insertion of a catheter into the urinary bladder calls for gentleness and for meticulous attention to aseptic technic. The Seattle study demonstrates

* Ansell, J.: Care of urinary retention catheters. NORTHWEST MED., 64:349-352, (May) 1965.

that careful attention to detail can avert infection in patients requiring indwelling catheters.

PREVENTION OF CORONARY ARTERY DISEASE

If physicians are in need of convincing arguments with which to persuade patients of the importance of preventing coronary artery disease, a perusal of some of the findings and conclusions of the Framingham, Massachusetts, Heart Disease Epidemiology Study is sure to help them.*

In the Framingham study, 5,127 men and women between 30 and 60 years of age and initially free from any evidence of coronary artery disease were examined every two years in an effort to detect any signs of the development of this common and serious condition. These men and women were followed for more than 12 years. One in every 10 men and one in every 20 women developed coronary heart disease during the study period.

Strong emphasis is given to one lesson learned in the study—that prevention, rather than new technics in the treatment of heart attacks, will be responsible if any significant reduction in the morbidity and mortality from heart attacks is ever achieved. It is pointed out that the most critical time in a heart attack is the first few minutes. The acute phase of a heart attack is defined as the first three weeks after onset. The over-all fatality rate in patients having heart attacks during the acute phase was 35 per cent. In 55 per cent of the patients who died during the acute phase, death occurred in the first five minutes of an attack, and in two-thirds of the sudden deaths, there was no preceding intimation of danger. Thus, in spite of all the developments in diagnosis and treatment, the case fatality rate in coronary heart disease has not been appreciably reduced, since sudden and unexpected death occurs in seemingly well individuals. An attitude of preventive maintenance is mandatory, not unlike that of the pediatrician and the obstetrician, if any reduction is to be made in the appalling number of deaths from coronary heart disease in this country.

Preventive measures are predicated upon an understanding of the pathogenesis of a disease process. As the authors point out, there has been extensive investigation of the relationship between serum lipids (particularly cholesterol) and atherosclerotic disease. They assert that despite conflicting reports, "the evidence that lipids are in some fundamental way related to development of atherosclerosis and coronary heart disease is overwhelming and should not be ignored. Reasonable pathogenic mechanisms consistent with the facts have been hypothesized. Subjects highly susceptible to development of coronary heart disease can readily be identified by taking into account, among other things, the serum lipid levels."

One phase of the Framingham study was an epidemiologic investigation of the role of lipids in coronary heart disease. Detailed analyses were made to determine the relative importance of the various lipid fractions in the development of the disease. As a consequence of these lipid studies in this group of some 5,000 people, it was concluded that cholesterol still appears to be the best predictor of coronary heart disease. It was not possible to establish diagnostic levels of lipids for atherosclerosis in general, or for coronary heart disease in particular. However, the rate of development of the disease was definitely related to the concentration of each of the lipids determined in these individuals on the initial examination, and each one of the lipids could be used as a predictor of coronary disease. No "safe" and no "abnormal" levels could be identified. At the levels of lipid noted in this population, a gradient of risk could be demonstrated from the lowest to the highest levels observed. It was emphasized, however, that the significance of any given serum cholesterol level depends upon a number of other factors in addition to the absolute level of the lipid. Since no "safe" level of cholesterol was identified in the subjects of the study, and since a gradient of risk was observed from the lowest to the highest levels, judgment concerning the significance of an elevated lipid level must depend to a great extent upon the presence or absence of those other factors.

Rather surprisingly, in the Framingham group, no age trend was observed in the cholesterol levels of the men. The distributions of cholesterol levels in the 35-44, 45-54 and 55-64 age groups were almost identical. Among the women, the cholesterol levels were below those of men in the younger age groups, but showed a striking increase to higher levels than the men's in the age group 55 to 64.

The study revealed that blood pressure profoundly influences the prognostic importance of serum cholesterol concentration. The authors assert, "At any serum cholesterol level, the risk rose precipitiously with the blood pressure." Thus blood pressure and lipid levels appear to be very important factors in the risk of coronary heart disease. In some way, hypertension seems to accelerate the progress of atherosclerosis.

It was found that overweight, by increasing the cardiac load, predisposed to the development of angina pectoris and the hazard of sudden death. This occurred independently of the lipid and blood pressure levels. But in patients predisposed to atherosclerosis, as indicated by elevated cholesterol and blood pressure levels, overweight greatly increased the risk of their developing angina pectoris and sudden death.

Even the much-maligned cigarette had its place in the study. At any given serum cholesterol level,

*Kannel, W. B., Dauber, T. R., Thomas, H. E., and McNamara, P. M.: Comparison of serum lipids in prediction of coronary heart disease. RHODE ISLAND M. J., 48:243-250, (May) 1965.

Editorials continued...

it was found that the risk of a heart attack was greater in smokers than in non-smokers. In persons predisposed to atherosclerosis by elevated blood pressure and cholesterol levels, the investigators found, cigarette smoking introduced a factor which "strikingly" increased the risk of a fatal heart attack.

In subjects with elevated cholesterol levels who also had abnormal electrocardiograms, and particularly if hypertension was present, the association was an ominous one. Likewise, the combination of elevated serum lipid, hypertension and a lowered vital capacity made the subject unduly susceptible to coronary disease.

The authors emphasize that the degree of concern over an elevated serum cholesterol level must depend upon the presence or absence of the several associated factors. The study demonstrated that an elevated serum cholesterol level became progressively more ominous as the associated risk factors increased in number. Through the use of ordinary office procedures, the physician can identify these various risk factors, recognize the coronary-prone individual, and estimate the magnitude of the risk he runs. In the preventive approach, the serum lipids play a dominant role in identifying the highly susceptible individual for whom an effective program is necessary. Through such an approach, it is hoped that effective preventive measures can be instituted long before the onset of overt disease.

In the preventive effort, it is of course important for us to maintain a proper perspective, and the authors conclude with an admonition: "While it is wise to teach moderation in all things, it is also important to point out that one cannot for reasons of practicality avoid many of the hazards that are so much a part of modern living; nor should one completely abstain from those things in life which are worthwhile."

CAVEAT EMPTOR!

In a New England family, all of the members were ill with a salmonella infection. Sleuths from the local health department determined that the source was a pet turtle which had been shipped by an ingenious entrepreneur in Texas to distributors in New England.

A suit for $5,000 actual damages and a similar amount in exemplary damages, in addition to $168.50 in medical expense, was filed against a pharmacy by the father of a 12-year-old boy. A white mouse offered for sale there had escaped from its cage and had bitten the boy on his right thumb. Health department employees had subsequently wired the cage shut and had instructed the proprietor to keep the mouse in quarantine for two weeks, so that it might be determined whether the animal was rabid. After the prescribed period, the proprietor was unable to produce either the mouse or the cage, and the boy was required to take anti-rabies vaccine. The proprietor was accused of negligence in keeping a "dangerous" animal, allowing it to escape twice, and failing to keep it quarantined.

Beware that you are not injured by a rotary power mower in your favorite barbershop, or bitten by a viper as you shop for lettuce!

AMA Suggestions for the Reform Of Boxing

The AMA Committee on the Medical Aspects of Sports has recommended the following measures to improve the safety of boxing:

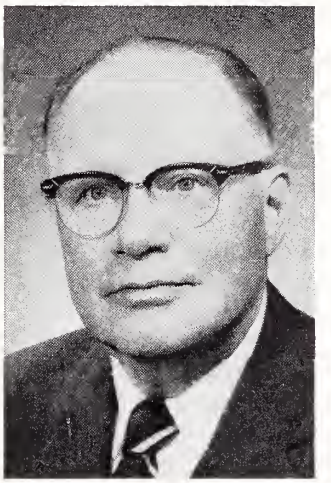
1. Research to produce a headguard that will provide optimum protection without impairing the boxer's functions and capacity for action.
2. Experimentation with less padding in gloves, so that the threat of hand damage will inhibit the power of blows.
3. Prohibition of wrapping the hands, again with the objective of cutting down on the force of blows.
4. Revision of scoring systems to place greater emphasis on skillful offensive and defensive maneuvering.

In addition, the AMA Committee recommends these eight prerequisites for every bout:

1. A thorough medical examination for each contestant.
2. At least one physician at all bouts, with absolute authority to terminate the match for medical reasons.
3. Termination of the match whenever a contestant has been knocked down more than once in round or evidences an inability to control the position of his head.
4. Automatic suspension of any boxer who has sustained a knockout, technical knockout or other severe injury, for as long as the medical consultants think necessary.
5. The universal adoption of the new improved shock-absorbing ring padding under the canvas and on the posts of the ring, to aid in prevention of injuries.
6. Required use of headgear to minimize lacerations and contusions, and properly-fitted mouthpieces.
7. Coaching and training of a quality to assure the maximum protection that skillful performance and good conditioning can provide.
8. Referees familiar with and alert to the health hazards inherent in boxing.

The National Collegiate Athletic Association no longer approves intercollegiate boxing, but the Amateur Athletic Union sanctions the sport.

President's Page



Since the recent meeting of the House of Delegates of the American Medical Association, in New York City, there has been considerable criticism of that body's so-called failure to adopt a positive position.

I quote the sentence that summed up its deliberations: "When the fate of the pending Medicare legislation is determined, this House of Delegates will review, in special session if necessary, the effect of the law and take whatever action is deemed necessary." In other words, when there is actual knowledge of the content of the law, then a course of action may be determined.

Let me remind you that the American Medical Association has successfully defended us for 30 years against third-party interference. Likewise, no organization advocating free enterprise has been able to maintain its stand against a regime that refused to listen to reason or to the wishes of the American people. Many of the men who were elected last fall had two obligations—one to the possessor of the coattails on which they rode into office, and another to the leaders of the organizations that financed their campaigns.

What is our future? It will depend upon us, the physicians of America. No isolated group of us can be effective. We must remain united, and we must keep our faith in the organization which has helped us make American medicine the best in the world. Regardless of whatever attitudes are voiced in the press, as individuals we must participate actively in both major political parties—and by participating I mean that we must give both time and money. If we are willing to be dictated to by a bureaucracy and to let it become ever more deeply entrenched, then our future is dismal. If small groups of us affiliate ourselves with "splinter" factions, we shall sink.

Stay "aboard" the organization that has guided our destinies for more than 100 years, and we all shall float!

Frank Ober

President

Actions of the AMA House of Delegates

New York City, June 20-24

F. J. L. BLASINGAME, M.D.
Executive Vice-President

Federal health care legislation, the report of the President's Commission on Heart Disease, Cancer and Stroke and The Gundersen Committee report on organization of the House of Delegates were among the major subjects acted upon by the House of Delegates at the American Medical Association's 114th Annual Convention held June 20-24 in New York City.

Dr. Charles L. Hudson, of Cleveland, Ohio, a member of the AMA Board of Trustees since 1961, was named president-elect of the Association. He will take office as the 121st AMA president in June, 1966, succeeding Dr. James Z. Appel, of Lancaster, Pennsylvania, who was inaugurated at the Sunday opening session of the House at the New York convention.

The 1965 AMA Distinguished Service Award was won by Dr. Tinsley R. Harrison, of Birmingham, Alabama, for his outstanding work in the field of cardiovascular diseases.

Final registration figures reached a grand total of 64,517, including 24,268 physicians, the largest physician registration in the Association's history.

HEALTH CARE LEGISLATION

Most controversal issue before the House was that of nonparticipation under any so-called "Medicare" law that might be passed by Congress. This subject came up in various ways in nine resolutions and in portions of Dr. Appel's inaugural address. The House recommended that "the members of the American Medical Association be reminded that it is each individual physician's obligation to decide for himself whether the conditions of a case for which he is about to accept responsibility permit him to provide his own highest quality of medical care."

In adopting a substitute resolution, the House declared that "the physicians of the United States of America pledge themselves to continue their search and activity, in whatever social environment may develop, to secure or to restore the freedom, high quality and availability of medical care which has been traditional in our country.

"When the fate of the pending medicare legislation is determined, this House will review, in special session if necessary, the effect of the law and take whatever action is deemed necessary.

"In keeping with the testimony before your Committee, and the expressed policies of this House, this action should in *no way* be interpreted as a change in Section 6 of the 'Principles of Ethics' of the American Medical Association which plainly states: 'A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care'; and that this House of Delegates reaffirm the principles of the Bauer amendment adopted in 1961.

"The House of Delegates reaffirm the nine principles for standards of health-care programs as adopted by the House of Delegates in its special meeting February 7, 1965, and amended to read as follows:

'1. No person needing health care shall be denied such care because of the inability to pay for it.

'2. It is appropriate that government revenues be used to finance health care when other resources have been found to be inadequate.

'3. Every level of government, municipal, county, state and federal, should assume a responsible share in the financing of such programs.

'4. The health care provided by such programs should be adequate and should be equal to that available to those who can afford to pay.

'5. Maximum use should be made of voluntary prepayment and insurance mechanisms.

'6. Administration of such program should be the responsibility of the state government. Participating states should be required to meet adequate standards of administration in order to qualify for federal funds.

'7. Eligibility requirements for benefits should be fair, realistic, uncomplicated and practical.

'8. Any such health care programs should provide funds only, and not direct services.

'9. Funds for such programs may come from

general tax revenues and not from social security taxes.' "

OFFER TO PRESIDENT JOHNSON

In a related action, urging that government seek the advice of the medical profession on health legislation, the House adopted a resolution which included the following statements:

"This House of Delegates restate its offer to meet with the President of the United States through our Legislative Task Force to discuss proposed medical care legislation with a view to safeguarding the continued provision of the highest quality and availability of medical care to the people of the United States.

"The House of Delegates of the American Medical Association instruct the Board of Trustees of the American Medical Association to embark immediately on an active campaign to inform the membership of the American Medical Association of the grave considerations in adhering to our principles of ethics posed by legislation now pending before Congress.

"The American Medical Association strongly urge those branches of the government interested in the formulation, the enactment, and the implementation of laws which deal with the provision of professional medical services to the public to seek and utilize the advice and assistance of the physicians who will render such services. Such advice and assistance should be received through our chosen representatives, the officers of the American Medical Association.

"The American Medical Association intensify its efforts to modify all such pertinent legislation, employing the necessary means and appropriate actions to the end that the health of the public and the pursuit of excellence in medicine be unimpaired by such legislation.

"The American Medical Association make every effort to continue, and where necessary, to expand its communication activities so that all physicians as members of component medical societies will be promptly, continuously and completely informed of developments in this critical area during the coming months."

THE DEBAKEY COMMISSION REPORT

In considering seven resolutions involving the report and recommendations of the President's Commission on Heart Disease, Cancer and Stroke, the House adopted a substitute statement which resolved that:

"The American Medical Association point with pride to the immense strides made in the approaches to the conquest of heart disease, cancer, and stroke under existing patterns of research and medical practice; strongly favoring the use of available financial support for extension of these patterns rather than replacement by a complex of medical control centers and satellites.

"The American Medical Association oppose those particular Commission recommendations which call for and have stimulated proposals for hastily contrived and unproven sweeping changes in the pattern of medical research, education, and patient care.

"The component state medical associations be urged to conduct conferences with medical educators and scientists, medical staffs of hospitals, medical society representatives, and other interested parties, for the purpose of exchanging information and for the development of such recommendations as may be appropriate for the continued improvement of medical education, research and patient care.

"The state medical associations be urged to report findings and recommendations resulting from these conferences to the AMA Board of Trustees, for the information of the Board, its councils, and the Association members."

THE GUNDERSEN COMMITTEE

Action on the Gundersen Committee report reviewing the size, make-up and functions of the House of Delegates was postponed until the 1965 Clinical Convention in Philadelphia. The House adopted a reference committee report saying: "It was apparent that if the organization of the House of Delegates of the American Medical Association, which is of paramount importance to the efficient and productive operation of the Association, is to be thoroughly studied by the delegates, more time will be required."

The Gundersen Committee was appointed an *ad hoc* unit at the directive of the AMA House in June, 1963. The Committee, which is chaired by Gunnar Gundersen, M.D., La Crosse, Wisconsin, a past-president of the AMA, brought in an extensive report.

The Committee pointed out that certain aspects of its work were unfinished, particularly those dealing with the function of the AMA scientific sections. The AMA House action recommended that the Committee continue its study of scientific sections.

MISCELLANEOUS ACTIONS

In dealing with 73 resolutions and numerous reports from councils, committees and the Board of Trustees, the House of Delegates also:

Agreed that hospital medical staffs and state and component medical societies be urged to encourage the establishment, maintenance, and proper use of cancer registries in hospitals, but that the establishment of such registries should not be made a requirement for accreditation by the Joint Commission on the Accreditation of Hospitals.

Instructed the Council on Medical Service and its Committee on Federal Medical Services to "remain alert to any deviations from policies of the Veterans Administration concerning the pro-

vision of drugs to veterans treated by private physicians, and to meet with pharmacy representatives so that the basic principle of freedom of choice" of pharmacists be maintained.

Reaffirmed its policy concerning the practice of radiology, pathology, anesthesiology and physical medicine in hospitals.

Reaffirmed AMA policy that human blood, as living tissue, should not be purchased under insurance contracts. It was recognized that exceptions may be necessary when there is need for unusually large numbers of transfusions, or whenever volunteer blood donors are not available.

Adopted a resolution calling for continued efforts to secure the passage of legislation "which will remove tax discrimination against professional people, specifically HR 10 (Keogh) and HR 697 (Weltner), but turned down recommendations that the AMA encourage its members to proceed at the state and county levels with the formation of corporations for the purpose of implementing an "organized effort in the courts to remove tax discrimination."

Directed the Board to study the opportunities and problems associated with Operation Head Start and other programs now operating or planned under the Economic Opportunity Act.

Referred to the Board for study a resolution calling for "a program of purchase of health insurance . . . in every state, subsidy for which shall be by federal-state participation," under which "extension of coverage shall be to all needy persons regardless of age."

Disapproved a series of resolutions urging the approval of an American Board of Family Practice, since such action would be in violation of established procedure for the creation of new specialty boards.

Urged the Council on Medical Education to establish a standard date of appointment for all approved residency training programs.

Encouraged state and county medical societies to participate in the formation of state associations of the professions, "to provide a vehicle, for interprofessional cooperation in those areas where united activity of the various professions can be of great benefit."

Amended the bylaws to provide that the vice president shall succeed to the presidency should the president die, resign or be removed from office.

Accepted a Board of Trustees report stating that it had referred to the joint AMA-American Bar Association committee a previously introduced resolution designed to present a grievance against alleged abuse of legal processes, characterized in the resolution as "vexatious litigation."

OPENING SESSION

Dr. Appel, expressing his personal opinion in his inaugural address at the Sunday session, said that if the omnibus Medicare bill is passed by Congress, the medical profession must do all it can to develop the good points and eliminate the bad points of the law. He declared that, regardless of personal opinion, "we do not have the right—either as physicians or citizens—to violate a law or to violate the spirit of the law or its intent."

Outgoing President Donovan F. Ward pointed out: "If it were true that the public climate was the dominant factor affecting the decisions of those who make legislative history, we now would be winning both in the House and the Senate."

ELECTION OF OFFICERS

Dr. Hudson's unexpired term on AMA's Board of Trustees will be filled by Dr. Irvin E. Hendryson, Denver, Colorado. Dr. Hendryson will serve until 1967.

Re-elected to the Board for three-year terms were: Drs. Lester D. Bibler, Indianapolis; J. B. Copeland, Austin, Texas; Gerald D. Dorman, New York; L. O. Simenstad, Osceola, Wisconsin.

W. Andrew Bunten, M.D., Cheyenne, Wyoming, was elected to a one-year term as the Association's vice president.

Dr. Milford O. Rouse, of Dallas, Texas, was re-elected Speaker of the House of Delegates, and Dr. Walter C. Bornemeier, of Chicago, was re-elected Vice Speaker.

Elected to the Council on Medical Education were Dr. Bland W. Cannon, of Memphis, Tennessee; Dr. William R. Willard, of Lexington, Kentucky (to succeed himself), and Dr. Earle M. Chapman, of Boston, Massachusetts.

Named to the Council on Medical Service were Dr. C. A. Hoffman, of Huntington, West Virginia, and Dr. Russell B. Roth, of Erie, Pennsylvania, who was re-elected unanimously. Dr. George D. Johnson, of Spartanburg, South Carolina, member of the Council on Constitution and Bylaws, was also re-elected unanimously.

Dr. James H. Berge, of Seattle, Washington, was named to succeed himself on the Judicial Council.

COUNTY SOCIETY OFFICERS!

Please Mark Your Calendar:

IMS Fall Conference for County Medical Society Officers and Other Representatives

Hotel Savery, Des Moines
Sunday, September 26

Coming Meetings

IN STATE

Sept. 15-16	**Postgraduate Course on Pediatrics,** University of Iowa College of Medicine, Medical Amphitheater, University Hospitals, Iowa City.
Sept. 16-17	**Interprofessional Seminar on Diseases Common to Animals and Man,** University of Iowa College of Medicine, Medical Amphitheater, University Hospitals, Iowa City.
Sept. 24-25	**Postgraduate Course on Problems in Urology,** University of Iowa College of Medicine, Medical Amphitheater, University Hospitals, Iowa City.
Sept. 26	**IMS Fall Conference for County Medical Society Officers and Other Representatives,** Hotel Savery, Des Moines.
Sept. 27-28	**Seventeenth Annual Meeting and Scientific Assembly of the Iowa Chapter of the AAGP,** Hotel Savery, Des Moines.

CONTINENTAL U. S.

Aug. 2-6	**Pediatrics,** University of Colorado School of of Medicine, Estes Park, Colo.
Aug. 9-13	**Internal Medicine,** University of Colorado School of Medicine, Estes Park, Colo.
Aug. 16-20	**Medical Audiology Workshop,** University of Colorado School of Medicine, Estes Park, Colo.
Aug. 19-20	**Fourth Annual Postgraduate Conference on the Medical Aspects of Sports,** University of Rhode Island, Keaney Gymnasium, Kingston, Rhode Island.
Aug. 22-27	**Eleventh Annual Flying Physicians Association Meeting,** Deauville Hotel, Miami Beach.
Aug. 22-27	**American Academy of Physical Medicine and Rehabilitation,** Sheraton Hotel, Philadelphia.
Aug. 25-27	**Annual Meeting, Southern Thoracic Society,** Jung Hotel, New Orleans, Louisiana.
Aug. 26-28	**Current Concepts in Surgery,** University of Wisconsin Medical Center, Madison, Wisc.
Sept. 8	**National Conference on Community Health Services,** San Francisco, California.
Sept. 14-17	**18th Annual Meeting of the American Association of Blood Banks,** Americana Hotel, Bal Harbour, Florida.
Sept. 15-17	**Three Days in Cardiology,** Lowry Hotel, St. Paul, Minnesota. (Sponsor: Minnesota Heart Association.)
Sept. 15-18	**National Conference on Community Health Services, Forum for Mid-West States,** Chicago, Illinois.
Sept. 19-22	**95th Annual Session of the Colorado Medical Society,** Broadmoor Hotel, Colorado Springs, Colo.
Sept. 20-24	**Basic Mechanisms in Internal Medicine,** The American College of Physicians, Medical College of Virginia, Richmond, Va.
Sept. 20-Oct. 2	**Postgraduate Course in Laryngology and Bronchoesophagology,** University of Illinois College of Medicine, Medical Center, Chicago.
Sept. 21-23	**Genesis, Epigenesis, Modern Physic and the Child,** Dept. of Pediatrics, University of Minnesota Hospitals, Minneapolis.
Sept. 22-25	**National Conference on Community Health Services, Forum for Southern States,** Atlanta, Georgia.
Sept. 23-25	**Tenth National Conference on Physicians & Schools,** Sheraton-Chicago Hotel, Chicago.
Sept. 24-26	**International College Surgeons Annual Clinical Congress,** Concord Hotel, Kiamesha Lake, New York.
Sept. 29-Oct. 2	**National Conference on Community Health Service, Forum for Northeastern States,** Philadelphia, Pennsylvania.
Sept. 30-Oct. 2	**American College of Obstetricians and Gynecologists District I & II Meeting,** The Americana Hotel, New York City.

ABROAD

Aug. 3-7	**Fifth Acta Endocrinologica Congress,** Hamburg, Germany.
Aug. 4-15	**American Physicians Fellowship Orthopedic Seminar,** Israel Medical Association, Israel.
Aug. 8-14	**Eighth International Anatomical Congress,** Wiesbaden, Germany.
Aug. 14-20	**Second Australian Medical Congress,** Perth, Western Australia.
Aug. 15-21	**Pan American Congress of Ophthalmology,** Rio de Janeiro.
Aug. 16-21	**European Congress on Molecular Spectroscopy,** Copenhagen.
Aug. 17-20	**Anesthesiological Symposium** (Anesthesiological Section of the Czechoslovak Medical Society), Praha, Czechoslovakia.
Aug. 20-25	**Ninth International Congress on Diseases of the Chest,** Council on International Affairs of the American College of Chest Physicians, Copenhagen, Denmark.
Aug. 22-27	**International Conference on Medical Electronics and Biological Engineering,** Tokyo Prince Hotel, Tokyo.
Aug. 23-28	**Congress on Neurological Surgery,** Copenhagen.
Aug. 23-29	**International Association of Logopedics and Phoniatrics,** Vienna.
Aug. 24-27	**25th International Congress of Pharmaceutical Sciences,** Praha, Czechoslovakia.
Aug. 25-Sept. 1	**Third International Symposium on Fluorine Chemistry,** Munich.
Aug. 26-Sept. 2	**Second International Conference on Protozoology,** London.
Aug. 28-Sept. 4	**Second International Symposium on Stereoencephalotomy,** Copenhagen (Aug. 28), Vienna (Sept. 4).
Aug. 30-Sept. 3	**Fifth International Congress of Neuropathology,** Zurich, Switzerland.
Aug. 30-Sept. 3	**Advanced Course in Electroencephalography,** Salzburg Congress House, Vienna.
Sept. 5-8	**Federation of Societies for French-Speaking Gynaecologists and Obstetricians Congress,** Lausanne, Switzerland.
Sept. 5-9	**European Academy of Allergology,** Stockholm.
Sept. 5-10	**International League Against Epilepsy**—Quadriennial Meeting, Vienna, Australia.
Sept. 5-10	**Sixth International Congress of Electroencephalography and Clinical Neurophysiology,** Vienna, Austria.
Sept. 5-10	**Eighth International Congress of Neurology,** Vienna, Austria.
Sept. 6-10	**Seventh International Embrylogical Conference,** London.
Sept. 9-11	**Second International Congress on Phlebology,** Wiesbaden.
Sept. 11-12	**Symposium on Brain Edema,** Vienna.
Sept. 15-18	**International Association of Gerontology** (4th Congress of European Clinical Section), San Remo, Italy.
Sept. 16-19	**Seventh International Congress of General Practice,** Salzburg, Austria.
Sept. 19-24	**World Medical Association 19th Annual Assembly,** London.
Sept. 22-28	**Eleventh International Congress of Radiology,** Rome, Italy.
Sept. 28-30	**College of General Practice of Canada,** Prudhomme's Hotel, Vineland, Ontario.
Oct. 5-9	**18th International Tuberculosis Conference,** Munich.
Oct. 5-9	**Fourth International Congress of Infectious Pathology and Parasitology,** Freiburg, Germany.
Oct. 24-30	**Eighth Quadriennial International Congress of Otorhinolaryngology,** Tokyo, Japan.
Nov. 7-13	**Eleventh Triennial International Congress of Pediatrics,** Tokyo, Japan.

THE JOURNAL *Book Shelf*

BOOK REVIEWS

GASTROENTEROLOGY, VOLUME II, SECOND EDITION, by *Henry L. Bockus,* M.D. (Philadelphia, W. B. Saunders Company, 1964. $28.00).

In 1944, Dr. Bockus and other university physicians and former colleagues at the University of Pennsylvania Graduate School of Medicine published the first edition of a three-volume GASTROENTEROLOGY, and it quickly became a standard reference work.

Volume II of the Second Edition of this monumental work brings up to date the subject matter on small intestine, absorption and nutrition, colon, peritoneum, mesentery and omentum. Much of the material has been rewritten, and new chapters have been added. Especially notable are the presentations of current thought on absorption, anemias and the new technics of diagnosis and management of these various disorders.

This is a very practical book which deserves to be in the library of every generalist, internist and abdominal surgeon.—*Alonzo L. Jenks, Jr.,* M.D.

PANCREATIC INFLAMMATORY DISEASE: A PHYSIOLOGIC APPROACH, by *David A. Dreiling,* M.D., *Henry D. Janowitz,* M.D., and *Claude V. Perrier,* M.D. (New York, Hoeber Medical Div., Harper & Row, Publishers, 1964. $10.50).

The authors have summarized current concepts of the physiology of the normal and abnormal exocrine pancreas and illustrated the applications of these concepts to the problems of etiology, pathogenesis, diagnosis and therapy of pancreatic inflammatory disease. There is extensive discussion of numerous laboratory tests and findings. An excellent series of x-rays illustrates radiologic diagnosis of pancreatic disease. Medical and surgical management of chronic and acute pancreatitis is presented, with illustrations of various operative procedures. A bibliography of 930 references is included.

One gathers that many phases of pancreatic function and malfunction are still much disputed. While giving all sides of a point in question may be desirable for a complete report, it may also be confusing to the reader who is hardly in the position to decide which view is correct, when the experts disagree.—*Alonzo L. Jenks, Jr.,* M.D.

SURGERY OF THE BILARY PASSAGES AND THE PANCREAS, by *Walter Hess,* M.D. (Princeton, New Jersey, D. VanNostrand Co., Inc., 1965. $25.00).

This book is nicely printed, profusely illustrated with photographs, line drawings, and artist's renderings in half tones—and it weighs exactly four pounds on my bathroom scales.

The author, Walter Hess, Privatdozent Dr. Med., Zurich, is Dozent of Surgery, Faculty of Medicine, University of Basel, Switzerland, and formerly Professor of Surgery, Medical School, University of Alexandria, Egypt. The sources of his material are (1) 1,341 cases from the University of Basel; (2) 178 cases from the University of Alexandria and Institute of Medical Research, Alexandria, Egypt; and (3) 135 cases from the author's private practice.

I found the book positively beguiling for its continental attitudes and for its preoccupation with the paraphernalia and "gimcrackery" of biliary surgery. The author has something he is trying to sell—radiomanometry. This is the study of the biliary passages using a combination of operative cholangiography and manometric pressure responses. He also comes out solidly for the choledochoscope. This instrument is a cystoscope modified with a 60° angle and several attachments.

Here in the United States, where biliary surgery has been made commonplace by such giants as the Mayos, Lahey, Cattell, Walters, Graham, Cole, Glenn and a host of others, this approach seems slightly less than real—especially as applied to "everyday surgical practice."

The author's faith in the new gospel is almost incredible. Let me quote: "A patient may conceivably be jaundiced, his biliary tract dilated; he may have multiple small stones in the gall bladder; and yet he may have no stones in the biliary passages. In such a patient choledochotomy and instrumental exploration of the choledochus is unnecessary. *We have a method that tells us with a probability bordering on certainty, in patients without stones, that there is no stone and no flow obstacle in the main biliary passage.* The same method, on the other hand, *will tell us, in patients with stones, how many there are, where they are, and to what extent they impede the drainage into the bowel. . . . What we need is to know in every case whether to do a choledochotomy or not.* (Emphasis, the author's.)

Under the heading *How To Remove Intrahepatic Stones,* one finds the following: "We do not spend time on difficult maneuvers to remove the stone if it cannot be extracted by a stone forceps. Forced attempts to extract are traumatic, dangerous, and rarely successful. First, we insert the choledochoscope and try to grasp the stone with a loop. If this fails, we can try to aspirate the stone with the aspirating cannula under strong vacuum. If this too fails, we conclude the operation by a wide choledochoduodenostomy; it is to enable the stone to pass into the duodenum if it later comes down by itself. . . . Intrahepatic stones were present in 16.7 per cent of our common bile duct

stone cases; 69.2 per cent of them were removable."

Nowhere in the author's technics of bile-duct exploration did I find a suggestion that simple irrigation might flush out a stone or two that could not be obtained by instrumentation.

The criteria for the diagnosis of stenosing papillitis are given and are expanded. Most cases where choledochotomy is done in the absence of stone seem to fall into this diagnostic category.

Some excerpts from Dr. Hess' personal series are interesting:

Total cases operated		1614
Cholelithiasis	1087	
Cholecystitis without stones	90	
Stenosing papillitis	273	
Dyskinesias	36	
Of the operations performed:		
Cholecystostomy	34	
Cholecystectomy (alone)	819	
Cholecystectomy and choledochotomy	333	
Choledochotomy (alone)	2	

In 333 cases of choledochotomy, stones were removed in 119 instances, for an average of 35 per cent.

At this point, the observation might be made that Cattell did 504 choledochotomies and found stones in 36.7 per cent of the cases.

I find I have not addressed any attention in this review to the pancreas. A good vista of pancreatic surgery is to be found in this text, although I was disappointed in finding no mention of Puestow and his colleagues, and their contributions to the surgery of chronic calculous pancreatitis.

All in all, this is a good book for a large medical library, and I shall donate my copy to such an institution.—*Tom D. Throckmorton,* M.D.

TRACY'S THE DOCTOR AS A WITNESS, by *William J. Curran,* LL.M., S.M., Hyg. (Philadelphia, W. B. Saunders Company, 1965. $5.75).

The medical doctor who is asked to appear in court may regard his appearance as an onerous chore. The doctor chooses to direct his efforts toward patient care, and having to leave his patients and being required to sit in the unfamiliar court-room is a less than enchanting prospect. In addition, a court-room appearance inevitably intrudes into the midst of a busy day, despite the doctor's surgical schedule, hospital rounds, office hours, etc.

Once sworn in, the doctor witness is asked a tedious succession of questions, but the direct examination is friendly. The cordiality, however, is rapidly replaced by incredulity and animosity when the opposing litigant's attorney begins his cross-examination. The medical witness is now in the cross-fire of the adversary system. His legal friends assure him that this is the way justice is achieved, but the witness wonders.

This account may seem overdrawn to some; but understated to others. In either event, THE DOCTOR AS A WITNESS, written by an attorney, is designed to allay the anxieties of the medical witness. This it does by clarifying the trial procedure, by providing suggestions on forms of testimony, and by alerting the doctor to problems he may face as a witness.

This volume could be subtitled "How To Be A Medical Witness." It is concise and clearly written, and meets the purpose of helping the doctor to prepare himself for the ordeal of the court-room.—*John T. Bakody,* M.D.

SIMPLE SPLINTING: THE USE OF LIGHT SPLINTS AND RELATED CONSERVATIVE THERAPY IN JOINT DISEASES, by *Jerome Rotstein,* M.D. (Philadelphia, W. B. Saunders Company, 1965. $6.50).

This book offers generalized information on treatment of arthritis and related joint diseases. The author traces the treatment of arthritis down through the ages, from approximately 4,000 B.C. to the present day, and includes several interesting diagrams and pictures (including the arthritic hip joint of a mummy).

He includes a short chapter on a conventional therapeutic program for the rheumatoid patient, and also a chapter on the pharmacology of drugs commonly used in arthritis at the present time.

The chapter on anatomy is fairly basic but nevertheless is a good review.

The two chapters on splinting technics and materials are well written and are illustrated by excellent diagrams and photographs.

This book would be useful in the office of a doctor who agrees with the approaches and splinting technics described here, but actually would be more useful for the therapist or technician who makes the splints. —*William D. deGravelles, Jr.,* M.D.

BOOKS RECEIVED

TODAY'S HEALTH GUIDE, ed. by *W. W. Bauer,* M.D. (Chicago, American Medical Association, 1965, $5.95).

HALLUX VALGUS, ALLIED DEFORMITIES OF THE FOREFOOT AND METATARSALGIA, by *H. Kelikian,* M.D. (Philadelphia, W. B. Saunders Co., 1965, $19.50).

MODERN TREATMENT—Treatment of Pancreatic Disease, ed by *William A. Knight, Jr.,* M.D. (New York, Hoeber Medical Div., Harper & Row Pub., 1965, $16).

OPHTHALMOLOGY, Principles and Concepts, by *Frank W. Newell,* M.D., M.Sc. (Ophth.), F.A.C.S. (St. Louis, C. V. Mosby Co., 1965, $12.25).

FRACTURE PROBLEMS: Problem Cases From Fracture Grand Rounds at the Massachusetts General Hospital, by *William H. Harris,* M.D., *William N. Jones,* M.D., *Otto E. Aufranc,* M.D. (St. Louis, The C. V. Mosby Company, 1965, $20.00).

SYNOPSIS OF CARDIOLOGY, by *William I. Gefter,* A.B., M.D., F.A.C.P., *Bernard H. Pastor,* A.B., M.D., F.A.C.P., and *Ralph M. Myerson,* B.S., M.D., F.A.C.P. (St. Louis, The C. V. Mosby Co, 1965, $9.85).

FROM AUSCULTATION TO PHONOCARDIOGRAPHY, by *Aldo A. Luisada,* M.D. (St. Louis, C. V. Mosby Co., 1965, $17.75).

SURGERY OF THE PAROTID GLAND, by *Robin Anderson,* M.D., F.A.C.S., and *Louis T. Byars,* M.D., F.A.C.S. (St. Louis, C. V. Mosby Co., 1965, $12.75).

TEXTBOOK OF OBSTETRICS, by *John C. Ullery,* M.D., and *Zeph J. R. Hollenbeck,* M.D. (St. Louis, The C. V. Mosby Co., 1965, $17.50).

NEW DRUGS, Evaluated by A.M.A. Council on Drugs (Chicago, American Medical Association, 1965).

PHYSIOLOGIC FOUNDATIONS FOR MARRIAGE COUN-

SELING, by *Joseph B. Trainer*, M.D. (St. Louis, The C. V. Mosby Co., 1965, $8.00).

A HISTORY OF PATHOLOGY, by *Esmond R. Long*, Ph.D., M.D. (New York, Dover Publications, Inc., 1965, $2.00).

PHYSICAL EXAMINATION OF THE JOINTS, by *William P. Beetham, Jr.*, M.D., A.A.C.P., *Howard F. Polley*, M.D., M.S. in Medicine, F.A.C.P., *Charles H. Slocumb*, M.D., M.S. in Pathology, and *Walter F. Weaver*, M.D., M.S. in Medicine, A.A.C.P. (Philadelphia, W. B. Saunders Co., 1965, $7.50).

Itching May Be Sign of Cancer

A persistent itching may be a sign of undetected cancer, according to an article by Frank E. Cormia, M.D., of the New York Hospital-Cornell Medical Center in the July issue of ARCHIVES OF DERMATOLOGY. Pruritis, usually localized on the legs, trunk or upper-body extremities, can be caused by reactions to drugs, kidney disease, diabetes or emotional disorders, but in patients with histories of arrested or "cured" cancer, he says it should be regarded as possible evidence of reactivation of the previous malignancy, though he admits that the incidence is probably small.

Dr. Cormia reports finding itching related to cancer in patients ranging from 47 to 74 years of age. The locations of the malignancies varied widely. His patients had cancers in such diverse organs as the nasopharynx, breast, uterus, stomach, colon and prostate gland. The intensity and extent of the itching could not be correlated with the estimated amount of tumor involvement.

"The presence of itching for months or even years before the discovery of the underlying carcinoma suggests that some cancers may remain small and localized for long periods of time," he says. "It is possible that such patients have a considerable amount of host resistance to cancer."

Cardiology Seminar

More than 150 heart specialists from throughout the country are expected to attend "Three Days in Cardiology" at the Lowry Hotel, St. Paul, September 15-17, under the sponsorship of the Council on Clinical Cardiology of the American Heart Association, the St. Paul Medical Center, and the Minnesota Heart Association.

The focus of this three day postgraduate course will be on functional pathology of valvular and pericardial diseases—congenital and acquired types.

The course will be directed by Jesse E. Edwards, M.D., Director of Laboratories at Charles T. Miller Hospital, St. Paul and board member of the American Heart Association. According to Dr. Edwards, the faculty, in addition to himself, will be composed of St. Paul physicians Lewis S. Carey, Robert S. Eliot, James N. Karnegis and James Ronan.

Blue Cross Visiting-Nurse Benefits

(The following was prepared by, and is published at the request of, Mr. F. P. G. Lattner, president of Iowa Blue Cross.)

It has been almost three years since Blue Cross and Blue Shield offered a contract with benefits for visiting-nurse care to Iowa's Senior Citizens. To this date no one has used these benefits.

The question being raised is whether the 1,525 Senior Citizens who enrolled in this program, or their physicians, are familiar with the visiting-nurse provisions or are even aware that they exist. Outlined here are the benefits of the Senior Citizen "70" contract pertaining to visiting nurse care and some of the services offered by the visiting-nurse organizations contracted with Blue Cross and Blue Shield.

Within 14 days following discharge as a Blue Cross-approved bed patient from a hospital or skilled nursing facility, a member, upon recommendation of the attending physician, is eligible to receive nursing care from a visiting-nurse service. In computing the days of care available to the member, two visits from a visiting nurse service shall be equated to one day in a hospital. The limit, of course, is the days remaining of unused hospital benefits.

Now, just what is meant by a "visiting-nurse service." This means nursing care furnished in a member's home or place of residence under the direction of a licensed physician by either a hospital-based visiting-nurse service that has contracted with Blue Cross and Blue Shield, or by a voluntary non-profit visiting-nurse service with a BC & BS contract.

There are 12 visiting-nurse organizations now contracted with Blue Cross and Blue Shield. They are located in Burlington, Cedar Rapids, Clinton, Davenport, Des Moines, Dubuque, Iowa City, Keokuk, Marshalltown, Mason City, Muscatine, and Waterloo.

These organizations send nurses to the patients' homes to perform such nursing services as giving hypodermic injections, taking blood pressure readings, giving bed or tub baths and changing surgical dressings. The nurses can instruct the patients and their families on special diets and the giving of injections.

The visiting nurse gives nursing care—always under the direction of a physician—to persons who require neither hospitalization nor the services of a full-time private-duty nurse.

Blue Cross and Blue Shield are anxious to provide their senior-citizen members with the best possible medical care at the lowest possible cost. Visiting-nurse benefits are just one of the ways they hope to accomplish this. Members and physicians are urged to avail themselves of these services whenever they are needed and available.

Iowa Chapter of the American Academy of General Practice

Explore Role of Family Doctor in Medical School Training

"The Role of the General or Family Physician in Medical School Teaching" was explored by 30 invited Academy officers, officials of other interested major medical organizations and educators at a two-day conference in May at the University of Kansas Medical Center.

The meeting, sponsored by the Commission on Education of the American Academy of General Practice, directed its attention towards four objectives. Divided into three study groups, each section was asked to:

1. Identify the body of knowledge, skills and attitudes which the general practitioner can more effectively teach.
2. Explore major problems involved in general practitioner participation in undergraduate medical education.
3. Develop minimum standards for general practitioners participating in undergraduate medical education.
4. Identify the major study and action steps essential to the improvement and increase of general practitioner participation in undergraduate medical education.

Each group reported its conclusions at a general session. Dr. Carroll Witten, president-elect of the American Academy, presented a summary of his impressions of the entire conference at the final session.

A satellite but important result expected from the conference was a set of guidelines by which to determine a core content of family practice. This is important as the first phase of the procedure to establish a recognized certification board.

All information developed at the conference will be studied by a subcommittee of the Commission on Education. A report will be presented to the commission and the Board of Directors. It is planned that a manual on "The Role of the General or Family Physician in Medical Schools," will be prepared and be available for distribution in the fall.

MARK YOUR CALENDAR NOW!

Iowa Chapter of the AAGP

Seventeenth Annual

SCIENTIFIC ASSEMBLY AND MEETING

Hotel Savery—Des Moines

September 27-28, 1965

Proposal for Certifying Board Outlined to SAMA Delegates

The Congress of Delegates approved a proposal for the American Academy Board of Directors to proceed with the establishment of a certifying board in general practice was outlined by Dr. Edward Kowalewski to 250 delegates and alternates attending the annual meeting of the Student American Medical Association in Chicago in May. Doctor Kowalewski spoke at a luncheon sponsored by the Academy as part of the AAGP's continuing program to encourage medical students to enter general practice.

"The American Academy of General Practice in its deliberations and actions is concerned for you ladies and gentlemen, medical students now, but really our physicians of the future," Dr. Kowalewski noted. "This concern for you is not superficial to us," he stated. "It is basic; it stems from the very deepest objectives and purposes for which our Academy was formed."

Doctor Kowalewski called the attention of attending students to the fact that the demand for family physicians is increasing, and that modern medicine requires longer periods of study and much greater depth of preparation than it ever did before. He noted that a great deal of work remains to be done before a board of general or family practice will be a reality, and cautioned that certification alone will not solve all the problems of general practice.

Iowa Association of Medical Assistants

Seventh Annual In-Service Workshop

The seventh annual workshop for medical assistants is sponsored by the Continuing Education Program of Iowa University at Iowa City in cooperation with the Iowa Association of Medical Assistants and the Iowa Medical Society. This workshop provides an educational opportunity to those medical assistants who wish to upgrade themselves in business and routine office responsibilities, and it gives the new assistant fundamental training in the various phases of "front office" procedures within the scope of her employment. The application of this training should enable the assistant to become more valuable to her physician-employer through increased efficiency.

Monday, October 4

8:30 a.m. Welcome—Dr. W. D. Coder, director of conferences, Extension, Iowa University
"Human Behavior"—Speaker to be announced

1:15 p.m. "Communications—Written and Oral"—Dr. Norman Kallous, chairman, Department of Office Management, Iowa University

Tuesday, October 5

8:30 a.m. "Written English"—Dr. Coder
"Spelling and Punctuation"—Dr. Coder

1:15 p.m. "The Secretary Herself: Appearance; Hygiene; Work Habits; Manners"—Miss Edith Ennis, instructor, Department of Office Management, Iowa University
Reception and Appointment Technics—Miss Ennis

Wednesday, October 6

8:30 a.m. "Legal Problems in the Physician's Office"—Professor Sam Fahr, College of Law, Iowa University

1:15 p.m. "Human Relations on the Job"—Miss Ennis

Registration will start at 4:30 p.m. Sunday, October 3, at the Iowa Memorial Union, and an orientation dinner will be served at 6:30. Registration fee of $40.00 pays for housing three nights starting Sunday, October 3; parking in the parking ramp directly across from the main entrance to the Union; for mid-morning and mid-afternoon coffee breaks; for all instructional materials; and for an attendance certificate. All meals will be served in the Union Cafeteria at the expense of the registrant.

Enrollment is limited to the first 50 applicants and IS NOT LIMITED TO IAMA MEMBERS. Fliers for this workshop are being mailed to IAMA members and to members of the Iowa Medical Society. Full information regarding registration will be given in the flier.

This year, for the first time, the workship will be completely self-contained. The $4,200,000 addition to the Union will be completed this summer, and registrants for this workshop will be assigned to some of the 112 twin-bedded guest rooms in "Iowa House"; meals will be served in the new cafeteria; and classes will be held in one of the 20 conference rooms. Also included in this new addition to the southwest corner of the Union are a Craft Shop, Little Theater, four private dining rooms (each with different decor), a ballroom seating 1,000, and "Big-Ten Lounge" on the third floor. The addition is completely air-conditioned, and bedrooms have TV, telephones and an intercommunications system. Other areas of the Union contain lounges, coffee shop, cafeteria, music room, TV room, dining rooms and offices.

In addition to program outlined above, the Iowa City District Association of Medical Assistants has scheduled activities for Monday and Tuesday evenings. On Monday, registrants will be taken on conducted tours of three medical offices in the community to show their facilities and various types of filing procedures, bookkeeping and accounting equipment, and office arrangements. On Tuesday evening, registrants are invited to attend the dinner meeting of the Iowa City Chapter. Local medical advisers and their wives, and Dr. and Mrs. Coder will be guests at this meeting, and entertainment will be presented following the dinner.

All classes are conducted by Iowa University faculty members, and the exchange of information and ideas in the discussion periods following each class has been both enjoyable and profitable. Consider this an investment in your future. PLAN NOW TO ATTEND—REGISTER EARLY. REMEMBER: IOWA CITY, OCTOBER 3-6, 1965.

—Helen G. Hughes

THE DOCTOR'S BUSINESS

Incorporating a Medical Building

HOWARD D. BAKER
Waterloo

There is a general misconception regarding the tax savings that are possible through incorporating a medical building, as compared to partnership or individual ownership. In reality, if the physician owner or owners are in a tax bracket below 42 per cent, they may incur a sizeable *disadvantage* by incorporating.

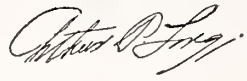
Under the Revenue Act of 1964 the federal income tax on corporate earnings will be 22 per cent of the first $25,000 of net profit, but it is fallacious to reason that if, as an individual, a doctor is in a tax bracket in excess of 22 per cent he will benefit taxwise by incorporating. That would be true only if the earnings were *never* to be returned to him. If earnings are to be paid him as dividends, they will be taxed again at his individual income tax rates. On the other hand, if all earnings are retained by the corporation until it is liquidated, he will have a capital gain taxable at a maximum rate of 25 per cent, since the earnings will constitute an increase in the value of his shares of stock.

As an example of the possible tax trap involved in corporate ownership, let's assume that four doctors invest $10,000 each, or a total of $40,000, in a medical building corporation. The corporation then acquires a $79,000 lot and building in exchange for that $40,000 and a $39,000 mortgage. If the annual net profit from operating the building is $5,000, the corporation will pay $1,100 of income tax each year and will have $3,900 annually with which to reduce the principal of the mortgage. Over a 10-year period, the corporation will pay $11,000 in taxes and will liquidate the mortgage. Now, let's assume that the building is sold at the end of 10 years, that the sale nets $79,000, and that the corporation is to be dissolved. Each stockholder will be entitled to $19,750 for his original $10,000, and will have a capital gain of $9,750 taxable at 25 per cent. Together, the four doctors will have to pay $9,750 in capital-gains taxes, which when added to the taxes already paid by the corporation, will make a total of $20,750 of income tax paid. It is therefore obvious that if the average of those four doctors had been in a top tax bracket of *less than 41 per cent,* they could have saved money by remaining a partnership. Furthermore, this example shows the *minimum* income tax payable. If the corporation's income had been paid out each year to them as dividends, it would have been fully taxed as ordinary income and a much higher tax would have resulted.

It should also be noted that we previously designated the 47 per cent bracket as the "breaking point" for tax savings. This reduction to 42 per cent seems significant. However, under the Revenue Act of 1964, the rate on income formerly taxed at 47 per cent is reduced to 39 per cent for 1965 and after. The new 42 per cent bracket is applicable to taxable incomes between $32,000 and $36,000, whereas the old 47 per cent bracket applied to taxable incomes of between $28,000 and $32,000. As a result, if one is to benefit from incorporating, one must have an even higher taxable income than before. Unfortunately, some incorporators who were on the borderline of the 47-per-cent bracket prior to 1964 may have lost their advantage as a result of the reduction in personal rates provided by the 1964 Revenue Act.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

STATE DEPARTMENT OF HEALTH



ARTHUR P. LONG, M.D., Dr.P.H., COMMISSIONER

Recommended Procedures in the Laboratory Diagnosis of Salmonellosis

In April 1965, The House of Delegates of the Iowa Medical Society adopted the following proposal by the State Hygienic Laboratory, University of Iowa and approved by the State Board of Health:

"Physicians utilizing the services of the State Hygienic Laboratory in the surveillance of salmonella infections be encouraged to submit stool specimens for bacteriological examinations rather than blood for agglutination studies."

The proposal suggested the discontinuance of routine bacterial serology for typhoid and paratyphoid fevers. It was drafted after a careful analysis of the febrile agglutination test in salmonella diagnosis.

A 1964 survey of state laboratories showed that seven laboratories expressed a desire to discontinue the routine febrile agglutination tests, especially for typhoid and paratyphoid. Some of the reasons for this discontent were: "As they are done on single specimens, they are useless." "Test of questionable value; cultures more reliable and diagnostic." "Rarely needed with good enteric bacteriology." All of these criticisms, and more, are quite valid.

The state laboratories of Minnesota and Wisconsin have sent out newsletters and reports stating the limitations of the Widal test, "because of the influence of vaccination and other diseases on the titer," and have suggested the submission of stool and/or blood specimens for bacteriological examination.

During the 1962-1964 biennium 18,315 agglutination tests for typhoid and paratyphoid fevers were performed at the State Hygienic Laboratory of Iowa. However, very few cases of typhoid fever or paratyphoid fever were reported. Those reported were all detected and confirmed by bacteriologic examinations. For example, in 1964 only 7.8 per cent (eight isolates) of all salmonella reported were Salmonella typhosa. No cases of paratyphoid A or B were reported during that time. During the same period, more than 9,000 agglutination tests for these disease agents were performed. It is obvious that this is a small diagnostic return for the technical time and money expended.

The State Hygienic Laboratory will discontinue routine typhoid-paratyphoid serologies for the following reasons:

1. There has been a steady decrease in the incidence of typhoid-paratyphoid diseases in the United States; e.g. there were 2,169 reported cases of typhoid in 1954, but only 608 cases in 1964. Thus we have seen a 72 per cent decrease in incidence during the past decade.
2. There is confusion about agglutinin titers because of vaccinations and infections. A high flagellar agglutinin titer is of no value in an individual who has been immunized with TAB or has a previous history of typhoid-paratyphoid fever. There can be marked titer increases in such individuals because of non-specific anamnestic reactions.
3. The somatic agglutinins are not specific for the typhoid-paratyphoid agents. Quite a few other organisms share common somatic mosaics.
4. Since the organism must be isolated from the individual for the confirmation of carrier status and epidemiologic procedures, a greater return for time and money is achieved when bacteriologic rather than serologic procedures are employed.

On the basis of the preceding comments, the following procedure is recommended:

Stool and/or blood specimens should be submitted on individuals suspected of having salmonellosis. If blood is to be cultured, it should be collected during the first two weeks of the illness. Stool cultures are the procedure of choice, for they become positive very early in the disease and often remain so until convalescence. Since culture identities are required for epidemiologic studies, the examination of stools and/or blood should yield more productive results than the agglutination studies, especially from individuals who have been vaccinated or have previous histories of salmonella infection.

The State Hygienic Laboratory would also appreciate receiving sub-cultures of all salmonella isolates on a referral basis. It is well established that in certain areas salmonellosis has become a problem of increasing magnitude, and surveillance information would be extremely helpful epidemiologically.

Infectious Hepatitis Iowa 1964-1965

The State of Iowa experienced a rapid increase in the prevalence of viral hepatitis during the autumn and winter quarters of the epidemiologic year 1964-65. In the previous epidemiologic year, 1963-64, there were only 314 cases of viral hepatitis reported, for an annual rate of 11.3 per 100,000 population. The case rate remained low during the first (summer) quarter of 1964-65, when 63 cases (2.3 per 100,000) were reported, but during the autumn quarter, 214 cases were recorded, and the quarterly case rate jumped sharply to 7.8 per 100,000. Iowa's increase in case rate from summer to autumn quarter was the largest for any state with the exception of Wyoming, where the numbers of cases involved were very small. For the first eleven weeks of the winter quarter (through March 20, 1965), the case rate remained high, 224 cases being reported, for a rate of 8.1 per 100,000.

The case rates for the State of Iowa and for the United States during the past eleven epidemiologic years are compared in the table below:

Epidemiological Year	Iowa Cases	Iowa Rate per 100,000	United States Rate per 100,000
1952-1953	1,271	48.2	16.3
1953-1954	3,367	127.9	29.3
1954-1955	1,778	67.0	23.9
1955-1956	454	16.8	13.9
1956-1957	233	8.6	10.0
1957-1958	183	6.7	8.2
1958-1959	148	5.4	11.1
1959-1960	342	12.4	17.1
1960-1961	1,445	52.5	35.8
1961-1962	1,479	53.5	33.8
1962-1963	441	16.0	24.5
1963-1964	314	11.3	21.7
1964-1965*	501	18.2	13.0

* First 37 weeks—through March 20, 1965.

For the 12 years shown, the case rate of viral hepatitis in Iowa has averaged approximately 50 per cent greater than the rate for the nation as a whole. Iowa reported higher case rates during the first epidemic wave (1952-54) than during the second wave (1960-61)—just the reverse of the nationwide experience. In other respects the annual case rate for Iowa has paralleled the rate for the nation quite closely, although the Iowa rate has fluctuated through a wider range. The current epidemiologic year—during which the incidence in Iowa has increased while the trend for the nation as a whole has been downward—represents the first time that this state has departed appreciably from the nationwide trend.

On the accompanying map the State of Iowa has been divided into four sections roughly equal in area. Places of over 25,000 population according to the 1960 census are indicated for reference. In each area, the case rate for viral hepatitis has been plotted, by quarter, for the past three years. The rates in the western half of Iowa have not changed appreciably in 1964. By contrast, the two eastern sections of the state have reported substantial increases in case rates during the past year.

Dubuque and Louisa Counties both reported cases for the first time in the second six-week period. In both of those counties, case rates reached maximums in the third period, and subsequently declined. In Dubuque County, which includes the city of Dubuque, 52 cases were reported during the 24 weeks, for a rate of 62.2 per 100,000. During the same time, Louisa County experienced the highest incidence of any county in Iowa, with 55 cases being reported for a rate of 551.8 per 100,000 during the 24 weeks. Although it reported no cases until the third six-week period, Muscatine County, which adjoins Louisa County on the north, resembles Louisa and Dubuque in reporting its highest case rate during the third six-week period. Des Moines County, however, which borders Louisa County on the south, reported low rates during the first three periods and experienced a sharp increase during the last six-week period. With the exception of Cerro Gordo County, it appears that most of the counties which account for the increased incidence of viral hepatitis in Iowa during the 24-week period adjoin the eastern border of the state which is formed by the Mississippi River. The significance of this observation is unknown.

In the following table the numbers of cases and the age-specific attack rates for the two broad age groups routinely reported to CDC are shown for the past five quarters.

INFECTIOUS HEPATITIS, IOWA, 1963-1965

Quarter	Under 20 Years Cases	Under 20 Years Rate	20 Years and Over Cases	20 Years and Over Rate	Adult/Childhood Ratio
Winter 1963-1964	50	4.7	54	3.2	0.68
Spring 1963-1964	33	3.1	27	1.6	0.52
Summer 1964-1965	35	3.3	23	1.4	0.42
Autumn 1964-1965	116	10.9	67	3.9	0.36
Winter 1964-1965*	130	12.2	83	4.9	0.40

* First eleven weeks only. Through March 20, 1965

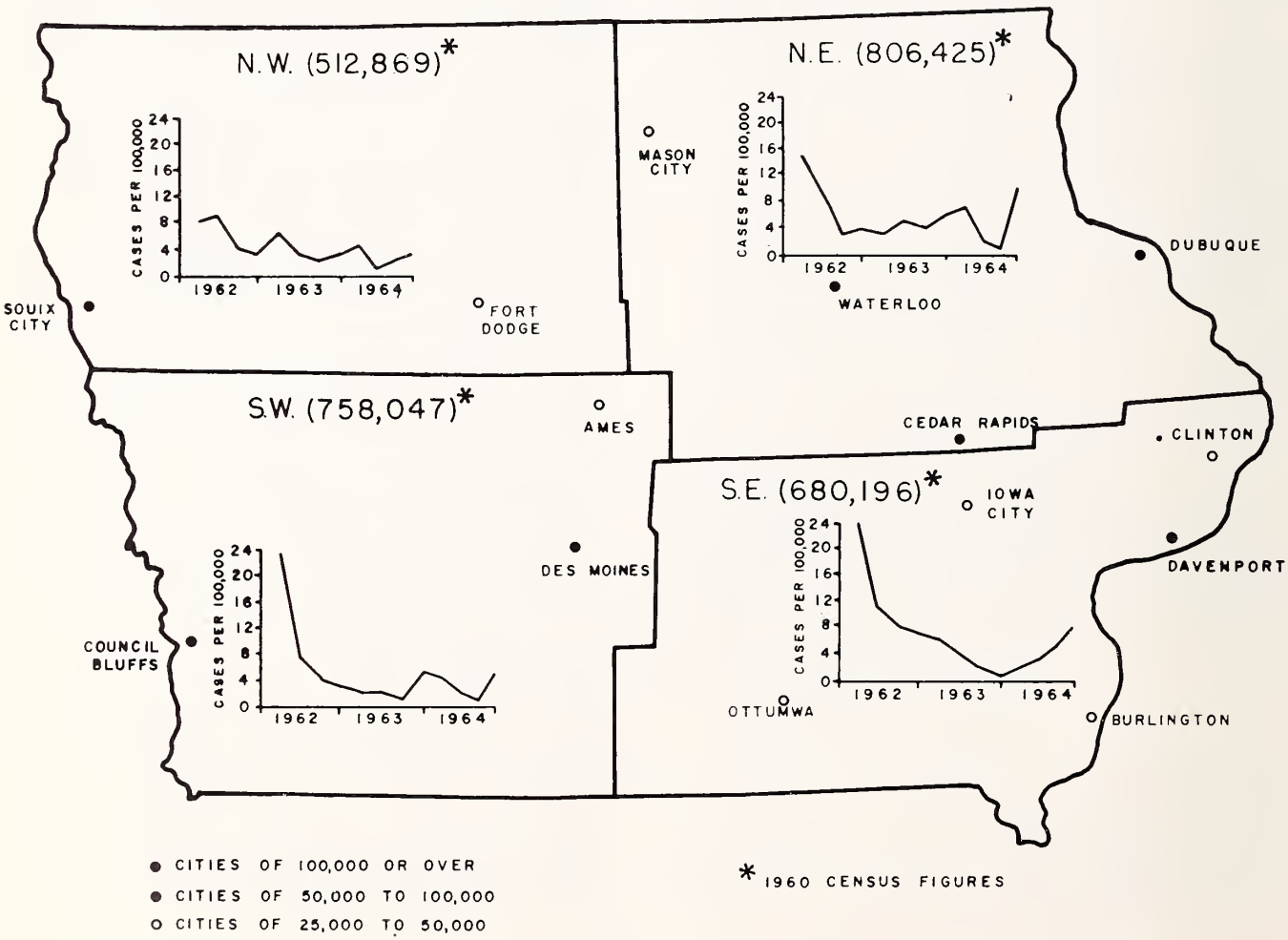
Both the "childhood" and "adult" case rates substantially increased during the autumn and winter quarters of 1964-65. The childhood rate increased proportionately more than the adult rate, however, with a resulting decline in the ratio of the two case rates, as shown in the right-hand column. Such a relatively greater increase in the childhood case rate has been observed during epidemics in other states (e.g., Maine, Hepatitis Surveillance Report No. 17, December 31, 1963).

During the first three weeks of March, 1965, the numbers of cases reported each week by the State of Iowa have been lower than the weekly totals reported during January and February. On the basis of the usual seasonal variation in incidence of viral hepatitis in Iowa, a continued decline during the forthcoming (spring) quarter would be expected.

(The above report on hepatitis in Iowa is taken from the U. S. Public Health Service Communicable Disease Center Hepatitis Surveillance Report for March 31, 1965. We are copying it here for two reasons. First, it furnishes a good report for the period, and second, it serves to show how the Public Health Service uses communicable disease information forwarded to it from the various states.)

VIRAL HEPATITIS IN IOWA

Reported case rates by quarter, 1962-1964



New Virus Diagnostic Laboratory At U of I

A new Virus Diagnostic Laboratory, under development at the State Hygienic Laboratory in Iowa City for more than a year, went into full-scale operation July 1. The Laboratory will serve physicians in the state and the State Department of Health. While laboratory diagnosis of viral diseases by serologic examinations has been performed routinely at the State Hygienic Laboratory for many years, the new facility will provide diagnostic services of a wider range.

Although specimens are being accepted at the new laboratory on a routine basis, it is emphasized that the Laboratory will not be able to process specimens from every patient suspected of having a viral infection. Since knowledge of the exact etiological agent is important from an epidemiologic as well as a therapeutic standpoint, the service can be most useful in an epidemic situation or when several cases occur that present an identifiable and specific syndrome. Quite often it is necessary to attempt virus isolation on only a few cases, and once the etiologic agent has been defined, simpler serologic methods can be used for the examination of sera from other cases.

The selection, time of collection, and preservation or storage of appropriate specimens for transportation to the laboratory by methods which will prevent deleterious effects are of paramount importance for viral examinations. Unless these preliminary steps are carried out properly, there is little chance of obtaining meaningful results. In addition, the processing of unsuitable specimens is costly in time and money. To insure that proper specimens are collected and submitted, the Virus Laboratory prefers that physicians first telephone the laboratory (Area Code 319, 353-5990). Proper specimen containers and shipping cartons with instructions for the collection and shipment of specimens to the laboratory will be furnished.

AVAILABLE FROM THE STATE DEPARTMENT OF HEALTH

For venereal disease control
- Procaine penicillin (aqueous or oil suspension)
- Benzathine penicillin G (Bicillin)
- Achromycin (250 mg. capsules)

Immunizing agents
- Triple toxoid
- Diphtheria-tetanus toxoid (Combined, absorbed or precipitated—Adult type)
- Salk and Sabin poliomyelitis vaccines
- Typhoid vaccine triple (Typhoid, para A and para B)
- Smallpox vaccine

Rabies control materials
- Duck embryo anti-rabies vaccine
- Anti-rabies serum

Histoplasmin

Snake anti-venom (kept at poison center and sub-centers)

Gamma globulin (for protection of people exposed to measles, German measles, or infectious hepatitis, if the risk is sufficiently great)

For detailed information, see the April, 1965, JOURNAL, *pages 225-227, or telephone the Department.*

Echo Type 9 Virus Isolations

From cultures sent to the State Hygienic Laboratory, isolations were made for ECHO type 9 virus from two patients in Jasper County during the week of June 26, 1965. Also, two from Dubuque County were reported during the week of July 3, 1965. Each of these isolations represents a cluster of cases of considerable size. The illness in Jasper County involved both adults and children. Their complaints were headache with severe pain behind the eyes and so much pressure they insisted their eyes were "about to pop out of their heads." They also complained of stiff neck, some soreness of muscles of the upper part of the body and nausea. One patient complained of extreme dizziness. There was also a suggestion of a rash in some of the younger children. Two Jasper County children were hospitalized with an admission diagnosis of aseptic meningitis. The isolations in Dubuque County were made from two children also hospitalized as cases of aseptic meningitis.

ECHO virus infection was first recognized in Iowa in 1955, in Marshall County. At that time, the earliest cases were hospitalized as non-paralytic poliomyelitis. However, when the numbers increased and no paralysis developed, the State Department of Health, with aid from local and U. S. Public Health Service sources, made a large scale investigation which resulted in the isolation of ECHO type 4 virus. That was the first time that the ECHO 4 virus strain was definitely found to be the cause of clinical illness.

At that time, all materials for culture and antibody study, throat swabs, feces, spinal fluid and blood, had to be sent out of state. The bulk of the material by arrangement was sent to the U. S. Public Health Service Communicable Disease Center Laboratories at Kansas City. Although the outbreak of illness occurred in the summer, the reports of the positive findings were not available until sometime during the fall. These conditions have changed. The State Hygienic Laboratories now have a complete virus laboratory equipped to

do culture work for all viruses and also to carry on antibody studies. Physicians who have patients with possible virus infections may contact the Laboratories for information on how to collect, store and mail culture material. The telephone number is Area Code 319, 338-0511, Ext. 2133, Iowa City.

Disaster Medical Care Conference

The 16th National Conference on Disaster Medical Care will be held at The Drake, in Chicago, October 30-31, it has been announced by Albert H. Schwichtenberg, M.D., chairman of the American Medical Association's Council on National Security.

Four symposiums—Care of the Traumatized Patient, Disaster Communications, Disaster Planning in Industry, Disaster Medical Resources—will be held during the two-day period to develop the conference theme of unified health resources planning for disaster.

"The Red Cross in Disaster" will be the subject of a Saturday luncheon address by Robert F. Shea, Washington, D. C., vice president, American National Red Cross. James Z. Appel, M.D., Lancaster, Pa., AMA president will address the conference Sunday morning.

Three representatives of the federal government will conclude Saturday's discussions with a presentation of the role of "Federal Agencies in Disaster."

A special Disaster Tornado Report will be presented during a Sunday morning breakfast session. A second highlight of Sunday morning's session will be three separate workshops specifically designed for the physician, allied health worker, and community leaders.

Following a presentation of the New York method of planning for disaster, William T. Rumage, Jr., M.D., Louisville, Ky., program chairman, will deliver the conference summary.

For additional information write: Council on National Security, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

On July 4, Iowa became the seventh state of the eight states in Civil Defense Region Six to place civil defense functions under the supervision of the adjutant general.

The Sixty-first General Assembly of Iowa created the Department of Public Defense, which is to consist of two divisions, both headed by Major General Junior F. Miller, the adjutant general. One of them will be known as the Military Division, Department of Public Defense, and the other will be called the Civil Defense Division, Department of Public Defense. The latter will be under the immediate supervision of a civilian civil defense director. The nine-member Iowa Civil Defense Administration has been replaced by a nine-member advisory council.

The new law also makes it mandatory that county boards of supervisors, city and town councils and school boards form joint county-municipal-school civil defense and emergency planning administrations. In each instance the sheriff, a member of the county board of supervisors and the mayors of towns (or their representatives) will be in the planning group. Boards of supervisors in adjacent counties can appoint a single director to head civil defense for two counties.

Morbidity Report for Month of June, 1965

Diseases	1965 June	1965 May	1964 June	Most Cases Reported From These Counties
Diphtheria	0	1	0	
Scarlet fever	186	392	177	Bremer, Jefferson, Johnson
Typhoid fever	1	0	0	Cerro Gordo
Smallpox	0	0	0	
Measles	512	833	562	Crawford, Dubuque, Mills, Polk, Pottawattamie
Whooping cough	4	8	0	Mills, Scott
Brucellosis	9	10	7	Scott
Chickenpox	305	476	183	Carroll, Dubuque, Pottawattamie, Scott
Meningococcic meningitis	1	3	3	Dubuque
Mumps	501	448	346	Carroll, Cerro Gordo, Des Moines, Mills, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	27	53	13	Dubuque, Henry, Polk
Rabies in animals	17	32	53	Des Moines
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	15	24	17	For the state
Syphilis	64	82	91	For the state
Gonorrhea	150	231	115	For the state
Histoplasmosis	0	3	88	
Food intoxication	0	0	0	
Meningitis (type unspecified)	0	3	0	
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	1	1	
Salmonellosis	5	3	8	Fayette, Linn, Muscatine, Polk, Warren
Tetanus	1	0	0	Warren
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	5	0	Dubuque
H. influenzal meningitis	1	0	0	Linn
Amebiasis	0	2	2	
Shigellosis	3	1	3	Johnson, Scott
Influenza	53	86	49	Polk

Physicians Should Urge the Establishment or Improvement of

Local Public Health Services

Public health services at the local level have been neglected throughout much of Iowa, and the time has come for us to remedy their inadequacies. The essence of public health consists of preventing disease, and of recognizing and curtailing epidemics. Certainly each physician emphasizes preventive measures in his consultations with all the patients who seek his help. But it is not within the private practitioner's province to make sure that they follow his advice, for their own good and for the protection of their neighbors. And what about the people who seldom consult physicians? Public health services at the local level—if adequately staffed and financed—can cooperate with doctors and effectively supplement their efforts in these and other fields.

Except in a few metropolitan areas and in a few populous school districts, Iowa's public health services are rudimentary. Many towns and some whole counties have no more than a part-time health officer whose function has been to insist upon the removal or palliation of nuisances that have become obvious to everyone. The State Department of Health has filled the gaps as best it could, but it has long been understaffed and underbudgeted even for its state-level functions.

A START WILL BE MADE NEXT MONTH

Within the next few weeks, the State Department of Health will make a concerted effort to persuade civic leaders throughout Iowa to establish or augment local health departments, and the attempt will succeed only if physicians support it vigorously. An efficient local health department must be a fairly large and competent organization, and no one is suggesting that every town, or even every county, should have one. Rather, it is proposed that 30 or 40 should be set up to cover the state. Dr. James F. Speers, until this month the director of the Des Moines-Polk County Health Department, is the newly-appointed head of the Division of Regional and Community Health Services in the State Department of Health, and it is he who will have charge of this project, besides supervising the work of the engineer and nurse whom the Department has stationed in each of its six districts.

During the next two or three months, Dr. Speers and Dr. Arthur P. Long, the commissioner of public health, are to present their plans at five regional meetings, under the sponsorship of 36 Iowa organizations, one of which is the Iowa Medical Society. They have been tentatively scheduled for Storm Lake, Atlantic, Waterloo, Iowa City and Des Moines. Physicians are urged to watch for announcements of the exact times and places.

The Iowa General Assembly, this past spring, provided the State Department of Health an enlarged appropriation, of which $135,000 per year is for the Division of Regional and Community Health Services, which for many years has been no more than a rectangle on the Department's organizational chart. The General Assembly further authorized political subdivisions such as towns or counties to join together in setting up agencies, of which health departments might be one sort, and though it failed to empower them to levy taxes specifically for public health services, they can appropriate funds for such purposes from their general revenues. It is obvious that they must be persuaded to create such departments and provide money for their support if a system of local health services is to become a reality in the immediate future. In 1967, when they have done so, the General Assembly can be persuaded that taxes must be levied specifically for its support.

THERE IS MUCH FOR LOCAL DEPARTMENTS TO DO

What are the tasks that local health departments can perform? One of them is the efficient gathering of statistics. If disease is to be curtailed, the first step must be to determine the dimensions of our problems. At the annual Health Education Workshop held in Ames on July 8, Mr. F. J. Kilpatrick, chief of the inspection division at the U. of I. Health Department, declared that instead

of the 27,000 cases of communicable diseases that were reported to the State Department of Health last year, there actually must have been nearly 1,000,000. Local health departments could insist that physicians do a more efficient job of reporting, and they could find many additional cases that hadn't come to the doctors' attention.

Another task for local health departments would be to formulate sanitary and building codes, and when adopted, to enforce them. One of the principal health problems in rural Iowa at present is occasioned first by the fact that few units of local government are fully advised about the health ordinances or regulations which they should adopt, and second, by the number and variety of local units. Multi-county health departments could provide competent personnel to advise local officials, and could work for uniformity of statutes, so that dwellings and restaurants beyond city limits, for example, might be subject to the same requirements as those located within the boundaries.

With the establishment of local health departments, inspections could be regular and thorough. Physicians who practice in small towns say that they rarely or never have heard of an instance in which the State Hygienic Laboratory found the bacterial count within safe limits in a sample of well water, and that the public water supplies of villages often are chlorinated either too much or too little. The precautions which public eating places should observe—the temperature at which water for dishwashing should be maintained, for example—are expensive and sometimes technically difficult to achieve, and proprietors consequently neglect them, either deliberately or inadvertently, if they aren't reminded frequently. Health departments could be relied upon to issue timely press releases regarding preparation and storage of food for large picnics, hazardous "swimming holes," and other local dangers to life or health.

Local health departments could regularly search for and eliminate sources of contagion, whereas physicians in private practice can do so only if the sources are fairly obvious. In the majority of instances the attending physician has his full quota of patients to care for, without undertaking epidemiology. The doctors' cooperation will always be essential, but if there were local health departments, they could do the "leg work," conduct interviews with the patient's family and community contacts, solicit the assistance of the State Department of Health and the USPHS, etc.

Moreover, by means of public-health nurses, local departments could help doctors protect the home contacts of TB patients and check on the care that patients were receiving in their own homes. At present, only 45 Iowa counties have public-health nurses. Nurses and sanitarians are essential constituents of all adequate public-health services.

The tasks that have just been mentioned have been with us for decades. They have been largely neglected and we haven't spectacularly come to grief, but times are changing, our lives are becoming more complex, and we must face new problems in addition to all of the old ones. One of these is occasioned by modern high-speed transportation. Immunizations haven't been maintained very well, and all that has saved us from epidemics of diphtheria or smallpox is that the causative agents long since have ceased to be endemic in our state. A "Personals" item in this month's JOURNAL shows what the Des Moines-Polk County Health Department is doing to keep people informed of the immunizations their children have received, and of the times at which they will need boosters. Rural departments could provide similar services.

Farm safety is already urged by numerous organizations in Iowa, but local health departments could help them in their campaigns. In addition, nearly every medium-size town in the state is acquiring industries, most of which are too small to maintain health staffs of their own. A local health department could help the owners survey their procedures for health hazards and find ways of preventing accidents. In the same areas lie many waste-disposal problems. The run-off of agricultural and industrial chemicals into streams and the contamination of the air can be expected to increase as our state becomes more and more industrialized, and in this field, as in all others, it is wise for us to stay ahead of our problems.

Local health departments might serve the schools as well, except where the systems are large enough to justify the employment of full-time school nurses and a supervising physician. At the Health Education Workshop in Ames, Mrs. Dorothy Bohnenkamp, the Sac County school nurse, listed 12 or 15 worthwhile activities for nurses to engage in at or in connection with schools. They can perform or promote vision, hearing and speech screening; they can make sure that periodic physical examinations are secured for all children; they can propagandize the Iowa Dental Plan; and there are many other possibilities. At present, the difficulty is that some Iowa counties haven't even one school nurse, and in many instances school nurses have no immediate supervision. Public-health nurses from local departments could share in their work, and physicians in the departments could guide the activities of both the school and the public-health nurses.

CONCLUSION

These, then, are some of the things that city, county or multi-county health departments could accomplish in Iowa. At most, the cost wouldn't exceed two or three dollars per capita per year, and the returns would consist of longer, more comfortable lives for many of us, as well as monetary savings.

Each physician should plan to attend one of the conferences on this subject that are to be held during the next few months, and should invite the civic leaders of his community to accompany him.

Woman's Auxiliary News

Iowa's National Committee Chairman

The Woman's Auxiliary to the Iowa Medical Society takes great pride in the appointment of Mrs. Howard G. Ellis, 5504 Shriver Avenue, Des Moines, as the National Chairman of Community Service. She was appointed at the National Convention at New York City, in June, 1965.

MRS. ELLIS

The Community Service Committee will direct its attention to the improvement of public health through education, and will seek to aid each Auxiliary in developing projects which will meet specific community health needs.

The Auxiliary members are indeed pleased that their high opinion of their immediate past-president's abilities is being recognized, and they offer their sincere congratulations.

Mrs. Henry Boe
President

Delegates to the National Auxiliary Convention in New York City

Mrs. S. M. Korson, president-elect, Independence, Iowa, was state chairman of delegates.

Mrs. Henry Boe, president, Sioux City, was State Presidential Delegate and gave Iowa's immediate past-president's report. Other Iowa delegates were Mrs. H. A. Weis, state Safety chairman, Rock Island, Illinois; Mrs. F. G. Ober, Burlington; and Mrs. S. P. Leinbach, Belmond.

Alternate delegates present were Mrs. O. A. Elliott, Des Moines, and Mrs. H. G. Ellis, a national committee chairman, also from Des Moines.

Present, not as a delegate but as an honored guest at many Convention functions, was the AMA president's wife, Mrs. Donovan F. Ward, Dubuque.

The delegates and alternates were present at all business meetings of the Convention. Also they attended the Monday luncheon and heard Congressman Catherine May, from the State of Washington, speak on the subject "Women Can Make the Difference." All delegates and alternates were present at the Tuesday luncheon to hear the guest speaker, Donovan Ward, M.D., 1964-65 president of the American Medical Association. The topic of his address was "Caesar Has His Brutus."

The Iowa Auxiliary acknowledges with gratitude Dr. Ward's untiring efforts in the interest of the private practice of medicine and free enterprise.

News From Around the Hawkeye State

Boone County

The annual picnic of the Boone County Medical Society and its Auxiliary was held on Monday, May 31, on the acreage of Dr. and Mrs. G. H. Sutton. The Auxiliary met afterwards, with Mrs. A. W. Puntenney, president, presiding. It was voted unanimously to purchase Centennial Shares for each member.

A report of the Annual Meeting of the Woman's Auxiliary to the Iowa Medical Society was given. Delegates to the meeting from Boone County had been Mrs. Puntenney and Mrs. E. E. Linder. They also had served as hostesses for a luncheon for all the delegates. Mrs. Puntenney also had reported on projects of the Boone County Auxiliary.

The Boone Auxiliary has been active in support of the Health Education Loan Fund, which assists girls interested in health careers. In addition, several members have served on the state HELF Committee.

At the state meeting, the Boone County Auxiliary had received an award for the largest increase in contributions to AMA-ERF. Mrs. W. G. Dennert was county chairman for AMA-ERF last year, and Mrs. R. L. Wicks is state AMA-ERF chairman.

Boone County participants won first and second places at the state level in the annual Essay Contest. They placed seventh and eighth, nationally. The Association of American Physicians and Surgeons sponsors the contest at the national level, and the Iowa Medical Society and its Woman's Auxiliary sponsor it within the state.

Clinton County

The Clinton Medical Auxiliary held its annual tea for the Future Nurses Club of Clinton High School at the home of Dr. and Mrs. Donald Mirick. The Future Nurses Club is sponsored by the Medical Auxiliary, and Miss Emma Hyer, school nurse, serves as its advisor.

Faye Abbott, a senior at Clinton High School, was chosen Miss Future Nurse of 1965 by club members and was given a charm bracelet by the group. She will attend the Presbyterian St. Luke's School of Nursing, at Chicago, in the fall. There are 56 members in the Clinton Future Nurses Club.

New Officers for the Medical Auxiliary are Mrs. D. R. Schumacher, president; Mrs. W. H. Foster, vice-president; Mrs. A. L. Jensen, secretary; and Mrs. G. S. Aurand, treasurer.

TEENS AND MEDICAL AUXILIARY HELP HANDICAPPED YOUTH

Through the efforts of the 15 teenagers who form the Clinton County Camp-Sunnyside Youth Council, and financial aid from the Woman's Auxiliary to the Clinton County Medical Society, a young man from Lost Nation, in Clinton County, will spend a two-week period at Camp Sunnyside, near Des Moines, a residential summer camp for crippled children and adults.

The actual cost for the two-week camping period is $97.50 per person, and that was the amount donated by the Medical Auxiliary in the form of a "campship."

Many members of the Medical Auxiliary have worked on the Clinton County Youth Council project.

Marion County

The Marion County Medical Auxiliary met at the Maple Buffet for a one o'clock luncheon May 25. Thirteen members and two guests—Mrs. Johnson, Red Wing, Minnesota, and Mrs. W. J. Streveler, Blairsburg, Iowa—were present.

The meeting was opened by Mrs. Yme Sloterdyk, and officers for the ensuing year were installed. Mrs. Robert McClung, president for 1965, then named her committees and discussed plans for the year's program.

The past-president's medallion was presented to Mrs. Sloterdyk by Mrs. Clark. That session concluded the meetings of the Auxiliary until September.

We squander health
In search of wealth.
We scheme and toil and save,
Then squander wealth
In search of health,
And all we get's a grave.
We live and boast of what we own;
We die, and only get a stone.

(Anonymous)

Getting Acquainted With . . .

Mrs. Robert Buckles, 415 Ivanhoe Road, Waterloo

President of the Black Hawk County Medical Auxiliary

Mrs. Buckles is the former Marcia Pierce, of Belmond, Iowa, and a graduate of Belmond, Iowa High School.

Dr. and Mrs. Buckles have lived in Waterloo, Iowa, since 1954, where Dr. Buckles, a 1953 graduate of the University of Iowa College of Medicine, is a general practitioner. They are parents of three children—two boys and one girl.

Marcia has been an active member of Black Hawk County Medical Auxiliary, serving in several offices and on the Board; is a member of First Presbyterian Church; is on the Board of Schoitz Hospital Auxiliary and has been its corresponding secretary for two years. She has also been on its Sewing Committee for Pediatrics for two years, and is now on its Gift Shop Committee.

Mrs. L. A. Gaukel, 1414 Iowa Avenue, Onawa

President of the Monona County Auxiliary

Frances Spooner was born in Sargent, Nebraska, and attended Duchesne College, in Omaha, and the University of Nebraska. She was married to Dr. Leo A. Gaukel in 1932. Her husband, a general practitioner, was graduated from Creighton University, in Omaha. They moved to Onawa in 1933, and have lived there since. They are the parents of four sons and one daughter, and have five grandchildren.

Frances was the first president of the Monona County Auxiliary, and is now serving another term. She is a member of the Garden Club, is organist at St. John's Church, is a member of D.A.R., Women's Club and Burgess Hospital Auxiliary, and is on the board of directors for Elmwood, a retirement home. She was for many years either a Cub Scout den mother or a Girl Scout leader. She likes to sew and knit, and she makes many of her own and her daughter's clothes.

Mrs. Warren H. DeKraay, 218 W. Manning St., Ottumwa

President of the Wapello County Medical Auxiliary

Nancy De Kraay was born in Rutland, Iowa. She graduated from Iowa Methodist Hospital School of Nursing in 1956, and was married October 13, 1957. Subsequently her husband was with the Air Force in St. Johns, Newfoundland,

and then completed his residency in surgery at the Veterans Hospital in Iowa City. They moved to Ottumwa in 1962. They have three children: Chip, 6 years; Elizabeth, 4 years; and Sarah, 6 months.

In addition to her activities with a busy family, she enjoys gardening, reading and work in the church.

Mrs. Howard E. Rudersdorf, 2808 Jackson Street, Sioux City

President of the Woodbury County Medical Auxiliary

Mary Ann Rudersdorf is the former Mary Ann Donohue, daughter of former Attorney and Mrs. Patrick J. Donohue, of Bonesteel, South Dakota. She attended Duchesne College, Omaha, graduated from University of South Dakota, and did graduate work at Columbia University, New York City. She was married to Howard E. Rudersdorf, M.D., on June 14, 1947 at Bonesteel. They have five children, John, 16 years; Thomas, 15 years; Patrick, 13 years; Mary Ann, 11 years; and Gregory, 6 years.

She is president of Sioux Med-Dames; secretary of Blessed Sacrament Confraternity; and a member of Junior League of Sioux City.

Mrs. Jerry L. Jochims, 415 Hawkeye, Iowa City

President of the Iowa Chapter, WA-SAMA

Mrs. Jochims was born in Sioux Falls, South Dakota, July 27, 1943. She attended the University of South Dakota, at Vermillion, and is now working as an electron-microscope technician in the Medical Laboratories at Iowa City. She was married to Jerry L. Jochims, of Holstein, Iowa on August 23, 1963. They have no children. He is now in his third year of medical school.

She is a member of Alpha Kappa Kappa medical wives' club, in addition to her activities for WA-SAMA. She has been fund-raising chairman, and chairman of the rummage sale, book sale, and the WA-SAMA dance. She served on the visitation program to the Johnson County Home, which is conducted by WA-SAMA under the sponsorship of the Red Cross. She attended the WA-SAMA national conventions in 1964 and 1965, and also its regional meeting in 1965.

Notice

We wish to thank the county presidents who have sent us their autobiographies. We trust you are pleased with the way they appear in this issue.

We are anxious to get acquainted with others of our county presidents right now, and if they have not already done so, we encourage them to forward information to us as soon as possible, in order that we can get it into our next issue.

Thank you.

YOUR EDITOR

Round-Up Report of 42nd Annual Convention, Woman's Auxiliary to The American Medical Association

More than 1,100 members and 500 children attended the 42nd annual convention of the Woman's Auxiliary to the American Medical Association held at New York's Americana Hotel, June 20-24.

Mrs. William H. Evans, Youngstown, Ohio, president, conducted the convention sessions, which included:

1. Amendment of the By-laws, changing the composition of the Board of Directors. The Board shall now consist of the elected officers, the immediate past president and the finance secretary, the historian and the chairman of the Committee on By-laws. The *latter three* will serve as *ex-officio, non-voting* members.
2. Presentation of $320,121.87, the Auxiliary's annual contribution, to the American Medical Association Education and Research Foundation. Six state Auxiliaries received awards of merit for raising the largest amounts in their membership categories.
3. A National Safety Council Award of Honor to the Woman's Auxiliary to the Arizona Medical Association for its GEMS program. This is the first time that this award has been presented to the same program for the third time.
4. A citation for "exceptional service to the nation's handicapped" to the AMA Auxiliary from the President's Committee on Employment of the Handicapped.
5. A Panel on "Cost of Illness—What's That?," in which Auxiliary members presented a breakdown on the various aspects of health care costs.
6. A warning against federal government control by Rep. Catherine May (R.-Wash.), who spoke at the Monday luncheon honoring representatives of national voluntary women's organizations.

In her inaugural address Wednesday, June 23, Mrs. Richard A. Sutter, St. Louis, the 1965-66 National Auxiliary president, urged doctors' wives to participate in action programs on public problems, coordinated with other agencies and organizations, working at local, state and national levels.

On Sunday, Mrs. Evans and Mrs. Sutter were guests of honor at a tea and fashion show. The show, courtesy of Coty, a division of Pfizer Laboratories, featured commentary by Miss Eleanor Lambert, director of the Ten Best Dressed American Women Awards. At the Monday luncheon, TWA presented a showing of foreign costumes. Auxiliary past-presidents, AMA officers, trustees and their wives were guests of honor at the Tues-

day luncheon, at which AMA president Donovan Ward, M.D., Dubuque, was the featured speaker.

Other convention features included reports from the chairmen of national committees, from each state president emphasizing her state's outstanding project for the year, and a report and special film on the AMA Institute for Bio-Medical Research. Dana L. Farnsworth, M.D., director of University Health Services at Harvard University, and a member of the AMA Council on Mental Health discussed "Mental Health Is Everybody's Business." The meeting closed with a round-up report of AMA House of Delegates activities by Dr. Ernest B. Howard, AMA assistant executive vice-president.

Correction

The legend beneath a picture of state Auxiliary officers in the July issue of WOMAN'S AUXILIARY NEWS failed to identify Mrs. R. E. Hines, Des Moines, first vice-president. She is third from the right in the photo.

A Word to Us Wives Is Sufficient?

With this deluge of legislative activity continuing to nudge at medicine, most of us married to the profession can only wish the proper advice to us COULD be "a word"—or at least just a few simple paragraphs. But it isn't that way. Even though there are so MANY words to be read, we can only urge all of you to read as many of them as possible. Know what is happening to medicine, and then step in and act whenever possible!—COLORADO MILE-HIGH NEWS

AMA-ERF Fund Raising Projects

Note Paper
Playing Cards
Christmas Cards

Mrs. R. L. Wicks, Chairman
204 South Story Street, Boone 50036

or

Woman's Auxiliary Office
529-36th Street, Des Moines 50312

Home-Service Program for Cedar Rapids Elderly

A two-phase program established in Cedar Rapids provides mobile meals and telephone service to home-bound elderly people. The meals, available at noon five days per week at $1 per meal are prepared by a Cedar Rapids institution and are delivered by Junior League volunteers. The Office of Services to the Aging and the Visiting Nurses Association decide which people are to receive the services.

The second phase of the program provides two personal telephone calls daily from local institutional residents to home-bound older people. The telephone service provides a means whereby personal relationships can be established between isolated elderly people and others of their age group, besides helping to make sure that difficulties haven't befallen them.

The Cedar Rapids program is a cooperative project of the organizations just mentioned.

Civil Defense Notes

Home Care and Management of Physically-Handicapped Mentally-Retarded Children

An Institute on Home Care and Management of the Physically-Handicapped Mentally-Retarded Child will be held on Saturday and Sunday, September 11 and 12 at the Paxton Hotel, Omaha. The purpose of the sessions will be to acquaint parents with what they can do in the home in the care and management of the child.

The staff for the Institute will consist of a pediatrician, psychiatrist, psychologist, public health nurse, physical therapist, occupational therapist, speech therapist, social worker, educator and a representative from the voluntary agencies—Iowa Association for Retarded Children and United Cerebral Palsy.

Sponsoring agencies will be Iowa and Nebraska State Medical Societies, Iowa and Nebraska Associations for Retarded Children and Iowa and Nebraska United Cerebral Palsy. Registration details may be obtained from any of the sponsoring agencies. Parents and professional people from Iowa, Nebraska, Missouri, Kansas and South Dakota will be invited to attend.

The Institute is made possible by a grant from the Mental Retardation Branch of the Department of Health, Education and Welfare.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

President-Elect—Mrs. S. M. Korson, Box 111, Independence 50644

Recording Secretary—Mrs. L. H. Prewitt, 33 Birchwood Hills, Ottumwa 52501

Corresponding Secretary—Mrs. H. C. Leiter, 2400 E. Solway, Sioux City 51104

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Veverka, Prairie City 50228

Co-Editor—Mrs. R. R. Carlson, 826 Sherman Drive, Ankeny 50021

Scientific Articles

Evaluation of Dyspnea*

ARTHUR M. OLSEN, M.D.
Section of Medicine
Mayo Clinic and Mayo Graduate School of Medicine
Rochester, Minnesota

Dyspnea is difficult to define. Dictionaries usually describe it as "difficult or labored breathing," but in common practice it is usually thought of as breathlessness. From a subjective standpoint, dyspnea varies from an awareness of breathing to the extremes of respiratory distress. One should bear in mind that dyspnea may occur in a normal person (for example, with exercise) or may be completely absent in a patient with a serious respiratory handicap (for example, at rest). In general, the normal person is unaware of the breathing effort until he has doubled his ventilation, and his exertion in breathing must have increased four- or fivefold before he experiences actual discomfort. Fear and anxiety also have considerable effects on the subjective sensation of dyspnea.

The work of breathing has been defined as the effort to expand the thorax plus the effort of overcoming resistance to flow of air in the airway. Disorders of respiration may develop insidiously. Some patients fail to recognize or correctly to identify the increased effort required for breathing. Thus, the patient with early emphysema may say that he feels fine but that he gets tired easily when he exerts himself. The same patient may complain of abdominal distress after meals, or even describe a pressure sensation in the chest. Therefore, the first responsibility of the physician who is evaluating dyspnea is to interrogate the patient carefully and analyze what may seem to be rather vague complaints.

The primary purpose of respiration is to effect an exchange of gases. Oxygen must be delivered to the alveoli and to the pulmonary circulation, and carbon dioxide must be eliminated. The first requirement for respiration, therefore, is an adequate supply of oxygen in the inspired air. Next, the person must be able to inflate the lungs. This inflation is accomplished by expansion of the thorax and contraction of the diaphragms, a combination often called the bellows mechanism. For ordinary breathing, exhalation is accomplished by the elastic recoil of the lungs, and is purely passive in nature. The pulmonary circulation must be adequate, and the alveolar and interstitial tissues must permit a ready transfer of gases into and out of the capillary blood. Furthermore, the blood must contain adequate numbers of erythrocytes with sufficient amounts of hemoglobin to combine with the oxygen. The normal lung has viscoelastic properties which enable it to respond to the movements of the thoracic wall and diaphragms, thus permitting movement of the respiratory gases in patent airways. Control of respiration by the central nervous system is largely involuntary, and is mediated through the respiratory centers of the medulla and the vagal, phrenic and intercostal nerves.

TERMINOLOGY

There is a special vocabulary used in descriptions of lung function. *Ventilation* refers to the change in lung volume and is effected by the thoracic skeleton, with its accessory and intercostal muscles, and the diaphragms. It also is influenced by the patency of the airways. *Perfusion* refers to the blood supply of the lungs. *Diffusion* pertains to the actual gaseous exchange between alveoli and capillaries. *Compliance* usually concerns the ability of the lung to expand and contract, but also is sometimes used with reference to the pliability of the chest wall. *Resistance* usually relates to the airways, but the same expression

* Read on Annual Mercy Hospital Medical Day, Des Moines, Iowa, November 21, 1964.

sometimes refers to the reluctance of lung tissue to change in shape or size.

All physicians are familiar with vascular shunts. In *lung shunts,* the blood passes from the arterial to the venous side of the pulmonary circulation in the normal way, but does not receive its normal amount of oxygen. The commonest example of a lung shunt is atelectasis. The term *dead space* is usually applied to any air passage which transmits gases in and out of the lung but does not participate in the diffusion process. The most important dead spaces are the nasopharynx, larynx, and major bronchi. Dead space, however, also occurs in any portion of the lung where ventilation takes place without perfusion and diffusion. This kind of dead space most commonly occurs in the presence of pulmonary embolus.

CAUSES OF DYSPNEA

Once one establishes the fact that the patient is short of breath, he must seek the reason. The evaluation of dyspnea depends on one's recognizing the factor or factors which have interfered with the transmission of oxygen to the tissues or increased the need for oxygen in the system.

Disturbances in ventilation can have any of a variety of mechanical reasons. Problems associated with injuries to the thorax require prompt recognition. Obstruction of the airways is of prime importance; however, any injury which disturbs the bellows mechanism may be equally disastrous. The evaluation and prompt treatment of thoracic injuries is a subject which should be reviewed frequently.

Impaired ventilation resulting from paralysis of one kind or another is familiar to all physicians. Quadriplegics and victims of bulbar poliomyelitis are in constant danger. Paralysis of one or both diaphragms is also detrimental to pulmonary function, especially if the movements of the diaphragm become paradoxical. The status of diaphragmatic function can be readily determined by fluoroscopic examination or inspiration-expiration roentgenograms of the thorax.

Restrictive impairment of ventilation has many causes, including disorders of the thoracic cage, the pleura, and the lung itself. It is well recognized that patients who have severe kyphoscoliosis or spondylitis, or perhaps have had extensive thoracoplasty for tuberculosis, often have severe impairment of ventilation. Also, patients with disorders of the pleura or pleural space will have difficulty in expanding and contracting the lungs. It is obvious, of course, that air or fluid of any kind in the pleural space will restrict the expansion of the lungs. Pleural thickening may be responsible for a "captive" and unexpandable lung. Finally, many disease processes may interfere with the compliance of the lung tissue and thus produce a restrictive disturbance of ventilation. Examples of this include pneumonic processes or the pneumonitis of other inflammatory diseases, any type of pulmonary fibrosis or scarring of the lungs, and, finally but of great importance, the congestion and edema that may accompany cardiac decompensation. One should remember that the dyspnea of heart disease is just as likely to be a pulmonary as a cardiac problem.

There are many different types of obstructive causes of dyspnea. The physician can often recognize the nature and the location of the airway obstruction on the basis of the patient's breathing pattern. Airway obstructions involving the vocal cords or trachea usually produce a high-pitched wheeze, and the patient has as much difficulty on inhalation as he does on exhalation. Obstruction in the more peripheral bronchi, such as may be produced by bronchospasm, edema, or retained secretions, is usually not hard to recognize. However, the nature of the obstruction should never be taken for granted without careful study, and the examiner should always look for signs of unilateral or localized obstruction. Careful physical examination, by the time-honored methods of inspection, palpation, percussion, and auscultation, may be more important than roentgenographic examination or elaborate studies of respiratory function. Chronic obstructive airway disease, commonly called emphysema, is not at all difficult to recognize in its advanced stages. However, to make an early diagnosis, the examining physician must be alert to this possibility and be willing to make careful studies of lung function.

Certain alterations in body metabolism require hyperventilation. The simplest and commonest of these is ordinary exercise. Other disturbances, such as fever or hyperthyroidism, likewise produce dyspnea. Again, patients with such disorders may call attention to their easy fatigability rather than to the increased effort that breathing is requiring of them.

If, for any reason, insufficient oxygen is available to the tissues, the patient will show evidence of respiratory distress. For example, it is possible for a person to have a normal respiratory apparatus but to have inadequate ventilation, possibly because of the effect of drugs, alcohol, or anesthetic agents, or conceivably, because of obesity or central nervous system influences. Obviously, hypoxemia will result if there is an inadequate supply of oxygen in the air available for breathing. Anemia can be responsible for poor oxygen supply to the tissues, irrespective of whether the deficiency is related to a low hemoglobin content in or an insufficient number of erythrocytes. Diminished tissue oxygen supply may be a consequence of some types of drug poisoning, or may be a factor in the dyspnea associated with metabolic or renal acidosis.

Reference has already been made to the dysp-

nea produced by pulmonary shunts. (In this case, lung tissue is perfused but not ventilated.) In addition, some patients are dyspneic because of pulmonary inflammatory, fibrotic, or interstitial processes which interfere with the transfer of oxygen from the alveoli to the capillaries. This disturbance, of course, is commonly known as alveolar-capillary block.

The foregoing is a brief summary of the principal causes of dyspnea. Again, it must be emphasized that dyspnea may go unrecognized unless it is related to the activities of the patient.

EVALUATION OF DYSPNEA

The evaluation of dyspnea begins with very careful inquiry into the patient's symptoms and activities, particularly his response to exercise. As has already been emphasized, the physical examination of the patient is important, and roentgenographic and fluoroscopic examinations of the thorax may be invaluable. However, the patient's performance is perhaps the best guide to his breathing ability. Serious degrees of disability may go unrecognized in the patient with sedentary habits.

The physician can usually get some estimate of the patient's breathing ability by comparing the patient's tolerance for exercise with his own. Thus, the physician should walk with the patient, not only on a level surface but also up and down stairs. The ability of a patient to blow out a match at varying distances is a good measure of lung function. Neither the patient nor the physician should attribute dyspnea solely to the tobacco habit. Although heavy smoking will impair the respiratory efficiency of any normal person, it is a mistake to assume that shortwindedness can be explained on the basis of smoking alone.

After consideration of the history, the results of physical examination, and the patient's response to exercise, a fluoroscopic examination is often helpful. The experienced fluoroscopist can get some estimate of the patient's breathing ability, but ventilation is better measured by spirometry. Simple spirometers are available which will measure vital capacity and maximal breathing capacity. It is also fairly simple to estimate the time required for forced maximal expiration. Usually, this involves measurement of the amount of air that the patient can exhale in one second or in some other unit of time. Maximal breathing capacity is the maximal amount of air that the patient can move in a given unit of time, and it is also a valuable measurement. However, it should be pointed out that some patients with a restrictive type of ventilation may be able to move their dead-space air quite rapidly without producing much ventilation of the alveoli. For the most part, the tests already mentioned can be done in the physician's office with no special equipment other than a simple spirometer.

Most pulmonary-function laboratories perform tests which are not available to the physician in his office. One of these is the so-called nitrogen clearance or nitrogen washout test. In this test, the patient breathes 100 per cent oxygen for 7 minutes, and if his ventilation is normal, he will have eliminated more than 97.5 per cent of the nitrogen in his expired air during the time allotted. Patients who have obstruction in the peripheral portions of the bronchial tree have difficulty in getting rid of all of their nitrogen. This is especially true in the patient with emphysema, whose ventilation is insufficient and who has certain portions of the lungs that are less well ventilated than others.

The pulmonary physiologist has developed other technics for measuring pulmonary function. These include measurement of airway resistance and lung compliance. The body plethysmograph is becoming a useful tool in more elaborate studies of pulmonary function.

The objective of respiration, of course, is to get adequate quantities of oxygen into the bloodstream and into the tissues. Therefore, in addition to those measurements of ventilation which I have already discussed, determinations of oxygen saturation of the blood are extremely helpful. Such estimations should be made not only while the patient is at rest but also during or following exercise. The most accurate and most dependable measurements of arterial oxygen saturation are made on samples of blood obtained by artery puncture. Comparable information, however, can be obtained with the ear oximeter. Even in severe degrees of respiratory insufficiency, the arterial oxygen saturation is likely to be normal at rest. However, it frequently decreases with exercise. Hence, the measurement of arterial oxygen saturation is very useful in evaluating the severity of a case of pulmonary emphysema.

Diffusion has to do with the interchange of gases across the alveolar-capillary membrane. Measurements are usually made in terms of partial pressures of the gases involved. The partial pressure of oxygen in the alveoli (103 mm. Hg) is higher than the partial pressure of oxygen in arterial blood (95 mm. Hg). This difference in partial pressure constitutes a *gradient*. Because the tissue solubility of carbon dioxide is very great, it diffuses readily across the alveolar-capillary membrane, and the partial pressures of carbon dioxide in the alveoli and the arterial circulation are the same (40 mm. Hg). Thus, no measurable gradient exists for carbon dioxide.

More elaborate studies of diffusion can be made with a special test that utilizes the inhalation of carbon monoxide; in this test too, exercise is helpful in unmasking the diffusion disturbance. Not infrequently, defects in diffusion can be detected with such special technics when studies of arterial oxygen saturation (either by artery puncture or

oximetry) indicate normal diffusion. The more elaborate studies of pulmonary ventilation and, particularly, of gaseous exchange are not necessary for evaluation of the usual case of pulmonary emphysema. However, they are quite useful in detecting early cases of conditions such as pulmonary fibrosis and interstitial pneumonitis. Also, the pulmonary-function studies now available are extremely helpful in the medicolegal problems sometimes associated with respiratory disease and in the quantitative determination of degree of disability.

Some comment is in order regarding the usefulness of pulmonary-function studies in the management of the various types of respiratory insufficiency. It is a common practice to measure the pulmonary volumes before and after the patient inhales an aerosol containing a bronchodilating agent. In this way it is possible to get some estimate of the reversible component in a case of emphysema and, perhaps, to separate true cases of emphysema from cases of asthmatic bronchitis or even tobacco-induced bronchitis. In our laboratory, measurement of pulmonary volumes before and after administration of bronchodilating agents is almost routine.

Determinations of oxygen saturation and of the partial pressures of the respiratory gases in the blood have been quite helpful in the management of patients suspected of having diffusion problems. Many patients, especially those with the Hamman-Rich syndrome, sarcoidosis, histiocytosis X, or alveolar proteinosis, may be candidates for steroid therapy. The use of pulmonary function testing equipment has been helpful not only in the selection of patients for such therapy but also in determining the response of such patients to treatment.

Finally, the use of blood acid-base balance studies has been extremely helpful in the treatment of some of the more serious respiratory distress problems. The Astrup technic has not only made it possible to measure blood pH quickly and accurately but also has enabled the physician to determine whether the patient is in acidosis or alkalosis and what buffering mechanisms are at work. The Astrup technic permits intelligent management of acute emergency situations and, again, helps to determine the response of the patient to therapy.

SUMMARY

The evaluation of dyspnea begins with the recognition that the patient has a respiratory problem. The physician must be alert to the possibility that some patients who complain of fatigue and lassitude are actually pulmonary cripples whose complaints are manifestations of dyspnea. The history, physical examination, and radiologic studies are important, but very often the recognition of dyspnea is based on response to exercise.

Having established the fact that the patient is dyspneic, one then may investigate the many possible causes for shortness of breath. Spirometric methods may be helpful in the differential diagnosis of dyspnea, but they perhaps are more useful in determinating the severity of the condition. Furthermore, the use of aerosol-type bronchodilating agents may give valuable clues to the proper methods of treatment.

Studies of diffusing capacity and measurements of the concentrations and partial pressures of the respiratory gases in the blood will give more detailed information regarding the nature of the disturbance and the degree of disability. Such studies may also be very helpful in devising a treatment program for the individual patient.

Ten Commandments for the Prevention of Alcoholic Addiction*

TO ENJOY ALCOHOL SAFELY:

1. NEVER take a drink when you "NEED" one.
2. SIP SLOWLY. Space drinks: The second thirty minutes after the first; the third an hour after the second; NEVER a fourth.
3. DILUTE drinks—never on the rocks.
4. Keep accurate record of amount and number of drinks. Never drink every day.
5. Do not minimize the amount you drink. Instead, exaggerate it. If you say you drink twice as much as you think you do, this will probably be nearly accurate.
6. Do not drink on an empty stomach.
7. No signal drinking such as "luncheon," "Left office," "on the way home," "before dinner," "before bed," "meeting people," "celebrating," and "to get me through."
8. Tired or tense? Soak in a hot tub.
9. Never drink to escape discomfort.
10. Never drink in the morning.

By understanding this dangerous, pleasant drug and observing precautions, many people may enjoy the use of alcohol.

Alcoholism is a psychophysical addictive disease to which all people are liable. It occurs in individuals who are physically predisposed and emotionally conditioned. The change from being nonalcoholic to alcoholic occurs suddenly, is seldom recognized, and is due to a breakdown in organic and psychological protective mechanisms. Once it has occurred, it cannot be reversed—then only total abstinence will save the individual.

It is possible for those who have not become alcoholic to enjoy the use of alcohol in this alcohol-oriented culture. Only they can prevent their becoming alcoholics, and to a large extent only they can prevent their children becoming alcoholics.

* Excerpt from NEW YORK STATE JOURNAL OF MEDICINE, 8-16-64, by Dr. William Terhune, New Canaan, Connecticut.

Surgical Management of Some Common Lung Lesions*

JOHANN L. EHRENHAFT, M.D.
Iowa City

To discuss all the common lesions which one sees on a busy thoracic surgical service in the allotted time is obviously impossible. For that reason I thought it might be of interest to you if I talked about peripheral pulmonary lesions and then if time permits, diverged from them to another entity, namely, spontaneous pneumothorax. The surgical therapy of most pulmonary lesions has become quite routine today, and presents no problem in most instances. Therefore, I should like to demonstrate a group of pulmonary lesions as they are seen on chest roentgenograms, and to discuss the findings encountered during surgery. As you undoubtedly will see, these represent a wide variety of lesions which in most instances can only be diagnosed by exploratory thoracotomy and direct histopathologic examination.

The lung is a rather complex organ with many functions. It not only is an organ for gas exchange, but undoubtedly also has other metabolic functions, many of which are not too well understood.

Anatomically, the lung parenchyma resembles the bone marrow or the liver in that it acts as one of the large filter systems in the body. Due to the air-containing property of the chest cage, contrasts in chest roentgenograms can easily be demonstrated and abnormal shadows can be found at a stage when lesions do not produce any physical findings or symptoms. The bronchial tree and the arterial pulmonary tree as well as the venous pulmonary return can be outlined nicely by modern technics. For the above mentioned reason, the lung actually represents a mirror which reflects not only inflammatory lung disease arising primarily within the lung parenchyma or bronchi, but also changes secondary to other areas within the body. The lung reflects primary neoplastic change within the lung itself, or may show changes secondary to other primary sites. It will mirror changes in other systemic disease and will reflect changes in the hemodynamic circulatory system within the body and the heart.

To arrive at an accurate diagnosis in patients with diffuse parenchymal changes is sometimes very difficult. The diffuse infiltrates look quite alike, and if specific tests have not made the diagnosis, the surgeon is often asked to carry out pulmonary biopsies. Miliary tuberculosis, acute histoplasmosis, pulmonary lymphatic and vascular spread from extrapulmonary neoplasms, sarcoidosis, Hamman-Rich disease and other diffuse pulmonary conditions producing infiltrates and fibrosis often tax the diagnostic ability of the physician.

PERIPHERAL LUNG LESIONS

By far the most commonly found peripheral lesions in the lung parenchyma are the ones due to secondary spread from a primary malignant neoplasm elsewhere. The lesions are often multiple, and particularly if the primary site of the neoplasm is known, they are easily diagnosed. But solitary metastatic sarcomatous or carcinomatous lesions in the lung may occur months or even years after complete removal of the primary extrapulmonary neoplasm.

Until recently it was thought by most physicians and surgeons that the appearance of metastatic pulmonary lesions always carries a hopeless prognosis, and that further treatment is not justified. Many reports have been collected to date which prove the contrary. Assuming that a given solitary pulmonary lesion presents a metastasis, the surgeon's greatest concern is whether or not there are other metastases present which have not as yet become clinically demonstrable. The more time that elapses between the removal of the primary neoplasm and the appearance of the pulmonary metastasis, and the larger this lesion is when it is discovered, the greater is the chance that no other metastases are present.

Obviously much depends upon the type of primary tumor, the degree of malignancy, the pathway the tumor takes in metastasizing and many other factors. Obviously, too, in the case of the small metastatic lesion, the unusual radiotranslucency of the lungs permits the early detection of the lesion at a time when metastases of similar size in other organs could not be clinically found.

* Read on Mercy Hospital Medical Day, in Des Moines, Iowa, November 21, 1964.

Since a solitary metastatic lesion may act as a focus and source of second-generation metastases, surgical treatment should not be delayed. We have treated a great variety of metastatic pulmonary lesions by surgical excision wherever feasible, and in some instances have carried out multiple thoracotomies to eradicate the disease. In certain types of neoplasms prolongation of life of patients has been possible, and in others, even after multiple operative procedures, probable cures have been obtained. We know that certain types of metastatic disease do not lend themselves to this type of treatment. The worst results are obtained in metastatic carcinoma of the breast.

Primary bronchogenic carcinoma of the lung is a very common disease, and a disease of many faces. I do not want to discuss it today, but shall demonstrate the similarity in appearance of this lesion and others occurring in the lung periphery. Symptoms of lesions involving main bronchi are quite different from those of peripheral pulmonary malignancies, and occur much earlier. The peripheral type of bronchogenic carcinoma is much more silent and insidious in its development. It also has a tendency to be much more anaplastic and malignant then central neoplasms. Usually the peripherally placed carcinomas appear as round solitary shadows of different size. Frequently a definitive diagnosis of the type of lesion cannot be established until an exploratory thoracotomy is carried out.

There are a few primary peripheral lung tumors of more benign nature—the so-called adenomas, hamartomas and chondromas. Again, the malignancy or benignancy of those lesions can not be determined unless removed. At times, pulmonary infarcts may appear as rounded discrete lesions, the diagnosis of which may also pose some difficulties.

Granulomatous disease involving other parts of the body has been recognized for a long time. Chronic, non-specific granuloma—and I use this term on purpose—is a very common occurrence. In this part of the country, most of the chronic granulomas are not on a tuberculous basis, but are due to histoplasmosis and represent histoplasmomas rather than tuberculomas. Nevertheless, solitary tuberculous lesions—small inspissated cavities—are occasionally seen and should be removed. If these cavities become large enough and if they empty into the tracheobronchial tree, they will form tuberculous cavities. The often-quoted maxim about the presence or absence of calcification in lesions of this type is not always valid. Calcification within a lesion usually denotes healed chronic infection, but such is not always the case. Unless it is known that this type of lesion has been present in the patient's chest for a long period of time without growth or expansion, it is dangerous to make a diagnosis of chronic localized granuloma.

Other causes for peripheral lesions may be fungus infections, such as actinomycosis or even aspiration of foreign material, as for instance in lipoid pneumonia.

In the preoperative workup and in the differential diagnosis of all the previously mentioned lesions, one has to run the gamut of diagnostic procedures, and all too frequently one cannot arrive at a definitive diagnosis. Considering the very high incidence of malignancy in peripheral pulmonary lesions and considering the impossibility of determining the malignancy or benignancy of such lesions, one can state categorically that all patients with such lesions should undergo an exploratory thoracotomy for diagnosis and definitive therapy.

SPONTANEOUS PNEUMOTHORAX

I should like to spend a few minutes on an entirely unrelated condition which we see frequently, and which it seems to me is often poorly understood and inadequately treated. The problem of spontaneous pneumothorax has always been thought not too dangerous, and the problem has all too often been approached very conservatively. The sudden collapse of the lung due to a spontaneous pneumothorax is usually accompanied by severe chest pain and shortness of breath. The sudden pain may occasionally be confused with that due to myocardial ischemia, dissecting aortic aneurysm, spontaneous ruptures of the esophagus or other painful intrathoracic emergencies. The history of previous similar episodes, however, should make one suspect the possibility of a spontaneous pneumothorax. In our experience, 90 per cent of patients had a dramatically sudden and severe onset of the symptoms. Some of the patients have carried chronic pneumothoraces for weeks and even months. The condition can be observed in all age groups, but the highest incidence is in young and middle-aged males. This common disorder occurs in otherwise healthy persons. It has often been linked erroneously to pulmonary tuberculosis as a causative factor.

Hayashi, in 1951, described the mechanism of production of a spontaneous pneumothorax. On autopsy material he demonstrated a valve-like action of the scarred peribronchiolar tissue at the base of the subpleural vesicles, finally resulting in rupture of the subpleural bleb into the pleural space. This concept was corroborated by Fischer, in 1922. He also suggested that surgical intervention may be indicated for this disorder. Kjergaard, in 1932, reported a large series of cases and demonstrated that this disease has no etiologic connection with active pulmonary tuberculosis.

The basic pathophysiology producing this type of disease depends on the localized subpleural, non-specific scarring of the peribronchiolar tissue, the formation of interstitial emphysema resulting in elevation of the overlying pleura, and sub-

pleural cyst formation. The connection of the subpleural bleb with an air-containing bronchiole permits the progressive distention of this bleb on the basis of an obstructive one-way valve mechanism. Filling of the blebs takes place during the expiratory phase of respiration, while positive pressures are present within the bronchial tree. This finally leads to disruption of the bleb and formation of the bronchiolar-pleural fistula. It is readily understandable why non-excisional therapy, which only permits the lung to re-expand and does not remove the underlying causative factors, will lead to a high incidence of recurrence. In the presence of collapse and atelectasis of the normal lung in a complete pneumothorax, one frequently can visualize the fully distended subpleural bleb in the chest roentgenograms or on chest fluoroscopy. Initial and marginal pneumothoraces have always been treated either by merely observing and permitting the slow re-absorption of the intrapleural air, or by needle aspiration. Rapid treatment of a pneumothorax can always be obtained by inserting underwater-seal drainage tubes to permit the intrapleural air to escape and to permit synthesis between the pleural surfaces.

In patients with repetitive or severe pneumothoraces and in whom a definite bleb can be demonstrated, we believe primary thoracotomy is the treatment of choice. At times, intrapleural adhesions will suspend the underlying lung to the parietal pleura, causing a bronchopleural fistula to persist. Besides producing a tension pneumothorax, disruption of intrapleural adhesions during the acute collapse may also result in massive bleeding into the pleural space, and this may be life-endangering. At times, we have seen patients who have had bilateral spontaneous pneumothoraces, first on one side and then on the other in rapid succession, which present a particularly dangerous situation, and if severe, are incompatible with survival.

In our opinion, repetitive and severe tension pneumothoraces as well as hemopneumothoraces should be treated by immediate exploratory thoracotomy. Chest-roentgenogram visualization of subpleural blebs in a spontaneous pneumothorax also constitutes an indication for their excision. Underwater-seal drainage may be employed in initial and minimal degrees of pneumothorax. It must be used as an emergency measure in patients with tension or bilateral pneumothoraces. Needle aspiration and expectant management seldom result in prompt and complete expansion of the lung. The incidence of recurrences is high with this latter type of treatment. It may come as a surprise to you, but in a large institution, the mortality rate of severe spontaneous pneumothoraces and their complications has been 5.7 per cent, if the expectant type of therapy has been followed. Thoracotomy and excision of ruptured subpleural blebs provide for eradication of the lesion and result in prompt and complete expansion of the lung. This form of treatment has prevented further recurrences.

Mercy Hospital Medical Day Questions and Answers

Dr. Paul From, Moderator: Dr. Ehrenhaft, what are the criteria for selection of cases of pulmonary metastases in which pulmonary resection is justified?

Dr. Ehrenhaft: Obviously only a small number of the patients who have metastatic lesions of the lung will be candidates for resection.

I should like to make the point that one should never give up, in some types of metastatic disease. Of course many of the metastases may not be solitary, but may be grouped in such a manner that they can be surgically resected, and if they are to be resected the procedure should be a segmental resection with minimal sacrifice of normal pulmonary tissue. Needless to say, if the patient has seeding throughout both lung fields and if there are multiple metastatic areas, resection is useless. Furthermore, if the recurrence is not purely local, and if there is metastatic disease in other areas, we don't consider pulmonary resections. There are other methods of treatment—chemotherapy, etc.—but if there is any possibility for local resection and if there is no evidence of recurring or remaining disease, or metastasis to other areas, the pulmonary metastasis should be removed, for this may be the only place in the body where the disease remains.

Dr. From: We go next to Dr. Olsen. What is the current status of idiopathic pulmonary fibrosis or Hamman-Rich syndrome?

Dr. Olsen: The Hamman-Rich syndrome, or diffuse interstitial fibrosis of the lung, is a disease of unknown etiology. The condition belongs to a group of inflammatory, fibrotic or granulomatous processes which involve the interstitial tissues of the lung and which often have an appearance

similar to that of collagen diseases. Clinically, the disease is characterized by dyspnea, cough and cyanosis, and it usually progresses to pulmonary insufficiency and cor pulmonale. The physiologic disturbance is primarily one of diffusion, and the Hamman-Rich syndrome is a classic example of alveolar-capillary block. The condition is very difficult to treat, although some cases do show improvement after treatment with adrenocorticosteroids. Unfortunately, remissions are likely to be rather brief.

Dr. From: Dr. Lillehei, what value do you place on an oxygen-exercise program for the pulmonary cripple?

Dr. James P. Lillehei: I think it is useful. A few people have become very enthusiastic about the use of oxygen with patients who have been unable to exercise because of severe pulmonary emphysema. They have increased the patients' tolerance for exercise by that means, and have assumed that oxygen was helpful in enabling them to retrain muscles and to get themselves in shape. This transformation is not a great one, but it may mean the difference between a bed-and-chair existence and an ability to get up and do some things. The patient's pulmonary function does not necessarily change. The only thing different is that the patient is capable of more exercise. Somehow he becomes trained, and oxygen seems to help in this process, at the beginning.

Dr. From: In your formal presentation, today, did the figures you gave us on the oral doses of aminophylline refer to the alcoholic solution, or just to the oral tablet?

Dr. Lillehei: Well, I don't really think there is very much indication for using the alcoholic solution. It undoubtedly is picked up faster, but that one advantage, it seems to me, is rarely going to be very important. If 15 to 30 minutes is important—and that seems the extent of the advantage of alcoholic theophyllin over the ordinary uncoated—then the alcoholic form would be useful. If I were an intern in an emergency room, I think maybe I'd use it, for it would be safer and easier to use than the intravenous dose. The disadvantages of giving the alcoholic solution are the expensiveness and the alcohol content. For example, the dose of Elixophyllin® for adults contains 400 mg. of theophyllin, which is the equivalent of 500 mg. of Aminophylline®, since Aminophylline is about 80 per cent theophyllin. A 75 cc. dose of Elixophyllin contains alcohol equivalent to that in an ounce of whiskey, and thus the alcohol content may be a problem at times.

Dr. From: What effect does a so-called "flu shot" have in connection with Hemophilus influenza and emphysema?

Dr. Lillehei: A number of investigators think that viral infections are very important at the beginning or somewhere along the line. Emphysema patients have an increased propensity to get chest infections, and many of these are viral infections or are thought to be so. However, I don't think the question has been settled. There isn't any doubt, however, that recent epidemics of influenza—particularly the most recent ones which hit in 1957-1958 and in the early 1960's with the Asian strain—killed more people who had chronic diseases, including emphysema, than could have been expected to die in those years. On that basis, physicians all over the country have been told by the USPHS and researchers investigating influenza vaccine that lives probably can be saved by injecting certain increased-risk patients—including those with chronic bronchitis and emphysema—with influenza vaccine.

Of course there are 200-300 viruses that infect and affect us, and we have only a couple of vaccines that help protect us against respiratory disease—poliomyelitis vaccine and this one. We hope that others will be coming along within a short time, and we shall probably have to give them to our emphysema patients.

Dr. From: Dr. Olsen, could you tell us, in a moment, the magnitude of the problem of chronic respiratory disease in this country—the number of people who may be affected by such a process?

Dr. Olsen: Certain chronic respiratory diseases are seen less commonly than they were a few years ago. Silicosis and other pneumoconioses can usually be prevented if proper precautions are taken in the affected industries. Since the introduction of antibiotics, chronic bronchiectasis is certainly seen less commonly, and when bronchiectasis does occur, our present methods of treatment enable us to treat the condition much more effectively. It would appear that pulmonary sarcoidosis is being seen with increasing frequency, and it is well known that a considerable number of cases go on to chronic pulmonary fibrosis, with respiratory insufficiency.

Of greatest importance, however, is the increased incidence of pulmonary emphysema. This is certainly due in part to the increased longevity of our people, but in addition, air pollution and the widespread use of tobacco are certainly significant factors in the development of pulmonary emphysema. Of greater importance, however, is that the condition is being recognized much more frequently than used to be the case. Reports published by the Department of Health, Education and Welfare state that emphysema now ranks second to heart disease as a cause of disability. Certainly many patients who were thought to have chronic myocarditis or arteriosclerotic heart disease are now properly recognized as having emphysema. It is true that cor pulmonale may be the final event for such a patient, but he is primarily a respiratory cripple. In any case, emphysema is designated as a cause of death at least five times more commonly than it was 10 years ago.

Dr. From: Dr. Ehrenhaft, can you tell us the significance of alternating—i.e., right-and-left—pneumothorax and pneumomediastinum in the newborn?

Dr. Ehrenhaft: I suppose that those are two separate questions. Bilateral pneumothoraces are rarely concurrent, but we have seen many pa-

tients with alternating collapse. Obviously the same disease process is present and active on both sides. By coincidence, first one side collapses, and then a few months later, the other side. We have made it a rule, if we have a patient with bilateral pneumothoraces, to be such that one side is operated upon and that there are no blebs remaining, for bilateral spontaneous pneumothorax is a very distressing affair when both sides collapse at the *same* time.

Pneumomediastinum in the newborn is an entirely different subject. The biggest things that happen to a person are to be born and to die. At one of these times he has to expand his lungs; when he dies, his lungs collapse, in most instances. What I'm trying to point out is that the resistance in the atelectatic, never-expanded lungs is very high. Pneumomediastinum in the newborn is usually a condition in which there has been considerable assistance from the physician or other person in attendance in an attempt to resuscitate the child. By means of pressure breathing or other resuscitative measures, air has been insufflated with great force, and there may have been a rupture of fine blebs or alveolar spaces. The air dissects into the tissue plane along the large vessels and bronchi which lead into the mediastinum, resulting in a pneumomediastinum. If this condition progresses, and if the resuscitative measures are continued, one can get spontaneous pneumothorax due to rupture of the pneumomediastinum into either pleural space.

Dr. From: What do you think about the respective advantages of needle biopsies of the lung and pleura *versus* open thoracotomy for diagnosis?

Dr. Ehrenhaft: In the lesions we have discussed, needle biopsy simply would not be possible because the small parenchymal lesions are not adherent to the parietal pleural surfaces.

Needle biopsies of the pleura are done frequently in certain undetermined, undiagnosed pulmonary pleural diseases, particularly if the condition is malignant and we have no other diagnosis. We have used needle biopsy occasionally if we were sure that the pulmonary lesion was adherent to the parietal pleura, or adherent to the chest wall. Otherwise, I am usually not in favor of needle biopsies of lesions within the lung parenchyma.

Dr. From: We have time for one more question, and I shall ask all members of the panel to join in discussing it. Actually, three separate questions have been asked, so the subject is evidently a popular one. "When is tracheotomy indicated for the treatment of respiratory disease such as severe emphysema, and how do you care for the tracheotomized patient?" Included in that question is the further query: "Do you utilize normal saline in irrigating the tracheobronchial tree or catheter?"

Dr. Lillehei: That is a hard question to answer in a general manner, but if I am to attempt doing so, I must say that tracheotomy should be done when the ventilation is markedly inadequate. By that I mean when hypoxia—particularly hypoxia associated with rather severe CO_2-retention, and more particularly when correction of the oxygen breathing induces further retention of CO_2—makes it obvious that the patient needs positive-pressure assistance. In addition, that kind of patient frequently has a combination of copious secretions and a feeble cough. That is the kind of patient who needs a tracheotomy for suction and perhaps for positive-pressure breathing.

It is usually said—and I think I agree—that most of us wait too long before doing tracheotomies in this type of patient. Thus, perhaps we should lower our general threshold.

As for the irrigation of tracheotomies, I can say that I am especially interested in that problem, and that I have done some animal research on it. I have convinced myself that normal saline—sterile normal saline put into the lung—causes atelectasis. If only a small amount of saline is introduced, obviously there will be only a very small amount of atelectasis. One must weigh the advantages of washing out secretions and aspirated material against the possibility of what I hope is no more than a transitory atelectasis. On the basis of my animal experiments, it is very clear that the damage to the lungs is much greater if the normal saline is cool—i.e., at room temperature. If it has been warmed to body temperature before being put into the tracheas of dogs, the damage has been much less.

Dr. From: Dr. Olsen, what are your comments on tracheotomy? Also, do you ever recommend surgical procedures for any of your patients who have chronic emphysema? I am thinking especially of patients in whom there may be some question of cystic disease of the lung.

Dr. Olsen: With respect to tracheotomy, I can only reinforce what Dr. Lillehei has already stated. When the patient with respiratory insufficiency shows evidence of exhaustion, tracheotomy may be a life-saving procedure. Besides cutting down on the "dead air space," tracheotomy makes it possible to do an adequate job of aspirating the secretions from the tracheobronchial tree. In addition, medications such as acetylcysteine can be introduced into the bronchial tree in order to liquefy the secretions. Our experience in using the various mucolytic agents by means of aerosol technics has not been very favorable, but drugs such as acetylcysteine or pancreatic dornase may be quite effective in liquefaction of secretions when introduced directly into the trachea. As has already been indicated, ventilatory assistance can be provided much more readily through a tracheotomy than by technics employing a mask. Certainly when CO_2-retention and acid-base problems are present, tracheotomy is almost mandatory.

Although I feel that tracheotomies are very valuable, I should like to caution against their unnecessary use. For one thing, the patient's cough mechanism is usually not so effective when a tracheotomy is present. Furthermore, despite all precautions, most tracheotomies produce trache-

obronchitis because infection is introduced into the tracheobronchial tree. And it often takes a long time to get rid of the tracheobronchitis. The organisms found in the secretions of patients with tracheotomies are often bacteria that are difficult to eradicate.

I should prefer to have Dr. Ehrenhaft answer Dr. From's question about the surgical treatment of emphysema, but I can state that our attitude has been quite conservative. We do not recommend sympathectomy, nor do we feel that so-called tailoring operations are very helpful. In the case of bullous cysts when good lung tissue is compressed, surgical intervention may be justified.

Dr. From: Dr. Ehrenhaft, what are your comments about tracheotomy and about surgery for emphysema?

Dr. Ehrenhaft: I very much agree with Dr. Olsen. I think surgery plays a role in cases of so-called isolated large, bullous emphysematous blebs, where there is compression of good, functioning lung tissue—or potentially good, functioning lung tissue—by the adjacent tension cysts. It gives relief, and we have done it bilaterally when there have been definite indications. There should be adequate respiration studies before and after the procedure. We do tracheotomies frequently. At times, endotracheal intubation with positive-pressure breathing can make tracheotomy unnecessary, if the problem is of short duration.

There is nothing wrong with tracheotomy, other than the possibility of infection. I like to warn people who do tracheotomies that their technic must be sterile—indeed that a tracheotomy must be treated like an open wound.

In most cases where respirators are used constantly, tracheotomies should be performed more promptly than they usually are. We favor tracheotomies particularly because they make nursing care and endotracheal toilet much easier and more effective.

Mercy Hospital, Des Moines

Clinicopathologic Conference

Joseph Song, M.D. (Pathologist), Director of Clinical Laboratories: The case today is one I brought with me from the University of Arkansas. It is not from Mercy Hospital, so Dr. From is not familiar with the case. Dr. From.

Paul From, M.D., Chief of Internal Medicine: Since all of you have not had an opportunity to read the protocol, I shall read it to you.

The case for discussion today is that of a 27-year-old Negro male who was admitted to the hospital complaining of weakness and vomiting of approximately two months' duration.

The patient stated that at the beginning of that period he began to note progressive weakness and began to have episodes of epigastric pain with nausea and occasional vomiting. He became progressively weaker and around Christmas, 1961, he began to lose weight. Also, at that time, he began to complain of stiffness of the knees and elbow joints, with pain on motion but no swelling. This arthralgia was severe enough so that he quit work. The three weeks prior to his admission, he had a severe sore throat with fever and difficulty in swallowing. Since that time, he had been bedfast, and his nausea and vomiting had occurred almost daily. Four to five days prior to his admission the patient noted that the vomitus was dark and of a coffee-ground-like material. He also noticed that his stools were somewhat loose and black. The patient also noted that two weeks prior to admission he had pronounced nocturia as much as 15 times a night. He had no other urinary tract symptoms. For one week prior to admission he also had noticed that his eyes and face were swollen, and he had frequent frontal headaches and occasional epistaxis. The patient estimated an 18-pound weight loss since the onset of his symptoms.

There was no history of rheumatic fever, kidney trouble or pneumonia. He had been hospitalized in 1957 for spontaneous right pneumothorax, which required water-sealed drainage and from which he made a complete recovery. At that time, the X-ray report showed pulmonary blebs. The patient stated that he had no known allergies, and that he did not drink or smoke excessively.

There was no family history of cancer, rheumatism, heart disease or diabetes.

On physical examination the blood pressure was 150/96 mm. Hg, and the pulse was 82, and the respirations were 18/min. The patient was a well-developed, well nourished male who appeared chronically ill and in acute distress. Examination of the head revealed moderate periorbital and facial edema. Funduscopic examination showed wet fundi, with physiologic cupping of the disc. There was no dullness in the chest, and rales were not heard. There was equal fremitus bilaterally. Decreased breath sounds were present on the

right. There was no evidence of clinical cardiomegaly. No diastolic murmur was heard, but a Grade III blowing holosystolic murmur was detected along the left sternal border. The peripheral pulses were normal. In the abdomen there was voluntary guarding, with moderate right epigastric and right upper quadrant tenderness. The liver was down some four to five centimeters. The remainder of the physical examination was within normal limits.

The hemoglobin on admission was 7.0 Gm. per cent. The hematocrit was 23 per cent. There were 2,990,000 red blood cells and 15,800 white blood cells per cubic millimeter, with a differential count of 2 eosinophils, 2 juveniles, 1 stab, 76 segmenters, 17 lymphocytes and 2 monocytes. The hemoglobin reached its highest of 8 Gm. per cent following the administration of two units of blood. Two stool guaiacs on February 20 and 27 were faintly positive. Urinalysis showed a specific gravity of 1.010, a reaction of 6.5, 3+ protein, and negative sugar. Microscopic examination revealed numerous red blood cells and red blood cell casts, with rare hyaline casts, occasional white blood cells and a few epithelial cells. Sodium ranged from 126 mEq./L.; potassium was 5.6 to 6.2 mEq./L.; CO_2 combining power was 17 to 13 mEq./L.; chlorides were 94 to 101 mEq./L.; total protein was 6.8 Gm. per cent; albumin was 3.5 Gm. per cent; and globulins were 3.8 Gm. per cent. Two lupus-erythematosus cell preparations were negative. Serum iron was 50 micrograms. C-reactive protein was 4+. Bromsulphalein showed 8 per cent retention at 45 min. Creatinine was 17.2 mg. per cent, and the creatinine clearance was 2.5 ml./min. The antistreptolysin titer was 125 Todd units.

The patient's X-rays indicated pulmonary fibrosis and bullous emphysema. He had an active duodenal ulcer and a questionable hiatal hernia by X-ray. The electrocardiograms were all within normal limits.

CLINICAL DISCUSSION

Well, here is a 27-year-old male who had weakness and vomiting of two months' duration, epigastric pain with nausea and vomiting, and subsequently hematemesis and melena. He had weakness, and he had lost 18 pounds. He had arthralgia and stiffness of the knees and elbows. Three weeks before admission he had had a sore throat, with fever and difficulty in swallowing. A week later he noted urinary frequency and nocturia, and a week later edema of the face and eyes with headache and nose-bleeds. Five years earlier he had had a spontaneous pneumothorax. He was chronically ill.

There was edema about his eyes and face, and his blood pressure was borderline to slightly elevated at 150/96 mm. Hg. The fact that his breath sounds were decreased at the right base might indicate some thickening of the pleura from his previous pneumothorax. Or it might be because of the emphysema or because of heart failure. There was a Grade II holosystolic murmur along the left sternal border. There were no thrills. This murmur might have resulted from his anemia. The liver was tender and was enlarged. He was anemic, and even after two units of blood, his hemoglobin didn't rise very much, which means either that his hemoglobin was manifesting some other abnormality or that he was losing blood in the meantime. He had a slight leukocytosis and a very slight shift to the left. There was a suggestion of some blood in the stools. We are not told that this occurred while he was on a hemo-free diet.

His urine had a low specific gravity, with albuminuria, mostly red cells with casts, occasional white cells, and occasional hyaline casts. He was acidotic in that his carbon-dioxide combining power was between 17 and 13 mEq./L. A normal carbon-dioxide combining power is around 25 to 28 mEq./L.

He was low in body base; his sodium was 126 mEq./L. His potassium was beginning to reach the upper limits of normal when it got to 6.2 mEq./L. His chlorides stayed normal. His total proteins were within normal range, although there was a very slight decrease in the amount of albumin. Albumin should be between 3.8 and 4.5 Gm. per cent, and his was 3.5 Gm. per cent. His bromsulphalein test was slightly abnormal at 8 per cent retention, when there should be less than 5 per cent. His serum iron was in the lower limits of normal. Serum iron determinations are very difficult to do. The range is somewhere between 50 and 200, and his was 50. C-reactive protein was very abnormal. There should be no C-reactive protein material in the normal serum. His was 4+. The antistreptolysin titer was normal, or, at least, not abnormal, and was not diagnostic of rheumatic activity. His creatinine was markedly abnormal at 17.2, since the normal range is 0.7 to 1.8 mg. per cent. His creatinine clearance, of which I shall speak later, was 2.5 ml./min. A normal range of creatinine clearance should be between 91 and 100 ml./min. Two L-E cell preparations were negative.

Well, let us discuss some of these studies, since what we have here consists mostly of laboratory data, and see whether we can arrive at some idea as to what was going on.

The first thing that strikes our eyes is that the urine was markedly abnormal. Now the study of fresh or centrifuged urine often gives us many ideas as to the diagnosis of the disease. If we think of the types of casts that we might observe in the urine, we get an idea as to what disease process might be present. For example, hyaline, fatty and granular casts indicate degeneration of the nephron. Blood casts, such as were present in this case, indicate glomerulitis, collagen disease or an embolism to the kidney. Heart-failure casts, which are large, broad casts, indicate uremia. Waxy casts mean that casts have been in the tubules a long

time before they came out. White blood cell casts, or as the technicians will report, white cells in clumps, usually indicate pyelonephritis. Albumin with casts and red cells can sometimes be seen in paroxysmal hemoglobinuria. There is a so-called "telescoped urine" in which we find all kinds of cellular elements, i.e., red cells, doubly-refractile oval fat bodies and renal-failure casts and protein. These findings indicate either collagen disorders or chronic pyelonephritis. There are a number of other cellular elements in the urine, but we shan't go into them because they haven't been reported to us in this protocol.

We notice that the patient's serum albumin was very slightly decreased, and we must think of liver disease since albumin is manufactured in the liver. Also, we must consider nephrosis, because albumin certainly is lost from the body in this condition; then there is steatorrhea because of the loss of building blocks in the stools, starvation and amyloidosis. His serum iron was at the very lower limits of normal. Serum iron is decreased in the presence of uremia, carcinoma and chronic infection, and is increased in the presence of hemochromatosis and active hepatitis.

To do a C-reactive protein, one takes the patient's serum and combines it with a rather specific antiserum, incubates the mixture for a couple of hours and then stores it in the refrigerator overnight; it is read the next day. Normally there is no C-reactive protein material in the serum. This test is a good indicator for a non-specific response to inflammation and infectious diseases. It is a good index of activity of a rheumatic process, for it is not affected by heart failure as the sedimentation rate might be. It is useful to follow along infarctions because of this tendency not to be affected by heart failure as is the sedimentation rate, and it is not decreased in chorea minor. So, all this protocol tells us is that the patient had a 4+ test, which means that some inflammatory or infectious process was going on.

The antistreptolysin titer is most helpful if one can demonstrate a rising titer. Certainly, then, this would indicate a previous infection with streptococci. If we have only one test to go by, however, we use 150 Todd units as a line—above and below which we might have abnormality or normality. More than 150 Todd units suggest a rheumatic process or activity going on, but less than 150 Todd units do not indicate rheumatic activity. In children the antistreptolysin titer is much more indicative of rheumatic fever than of rheumatoid arthritis.

We were not told the blood urea nitrogen in this case, but we were given the creatinine. Creatinine usually is not increased in the presence of acute renal insufficiency or obstructive uropathy. It indicates true renal parenchymal disease. The creatinine clearance test is a fairly easy test to do, but it is not done very commonly. It is designed as a kind of intermediate between tests in which exogenous materials have to be added to the body to determine their range of excretion. It isn't very good on the endogenous basis because sometimes a patient has a very abnormal kidney and yet has a very normal creatinine clearance. This is because it not only goes through the glomerulus, but it also is excreted by the tubules. In health it should approach unity, or one. As one gets more abnormality in the kidney, the creatinine clearance rises to 2 or more. Occasionally, as I say, in advanced diseases it will still be normal. It is roughly equal to the glomerular filtration rate. In milliliters per minute, the clearance should be between 91 and 130. In this case, as we know, it was 2.5, which is markedly low.

From all these data, it would seem to me that this basically must be a case of renal disorder. If we are logically to figure out what renal disorder the boy had, we must think of all of the kinds of renal disease that we might run into. I have listed on the blackboard the various broad categories of renal disease: (1) glomerular nephritis, (2) nephrotic syndrome, (3) interstitial nephritis, (4) acute tubular necrosis, (5) vascular nephritides, (6) congenital structural defects, (7) metabolic renal defects and (8) renal tumors.

Glomerular nephritis can be acute or chronic. In the acute type a patient might have eclampsia, but obviously this fellow couldn't have it since it is seen only in pregnant women. In the chronic glomerular nephritides we must think of amyloid disease, or we might think of an acute glomerular nephritis which has become chronic.

Either acute or chronic glomerular nephritis can lead to the nephrotic syndrome. There may be such an entity as pure nephrosis, one that just starts out as this and nothing else. Certain infections can cause the acute type. Syphilis is one. In the chronic type of nephrotic syndrome we would have to think of amyloid disease, Kimmelstiehl-Wilson syndrome as it occurs with diabetes mellitus, multiple myeloma, thrombosis of the renal vein, and disseminated lupus erythematosus.

Interstitial nephritis can be either acute or chronic. Under the acute we find such entities as acute pyelonephritis, necrotizing papillitis, focal nephritis, embolic nephritis, radiation nephritis, and that due to Weil's disease or leptospirosis, or again, syphilis.

Chronically, with interstitial nephritis we can have chronic pyelonephritis, tuberculosis, leukemias, lymphomas, multiple myeloma, chronic radiation nephritis, and disorders of calcium metabolism such as sarcoidosis, hyperparathyroidism and vitamin-D intoxication.

There could be acute tubular necrosis. In the acute phase we find toxins, hemorrhage and shock as the causes. In the chronic phase is any residual from this tubular damage plus interstitial fibrosis.

In the past few years we have defined a group

of vascular nephritides which can be either acute or chronic. In the acute stage we have malignant nephrosclerosis, acute disseminated lupus erythematosus, acute polyarteritis, acute cortical necrosis and hemorrhagic fever. Chronically we have benign nephrosclerosis, chronic disseminated lupus erythematosus, chronic polyarteritis, arteriosclerosis, and a relatively new granulomatosus type of disorder called Wegener's granulomatosus.

We have congenital structural defects such as polyarteritis, or unilateral renal agenesis. We can have metabolic renal defects like the de Toni-Fanconi syndrome. We can think of renal tumors. We have to keep in mind all of these ideas in trying to diagnose what disorder this boy may have had.

Let us go back over some of the commoner ones of these, and see whether we can rule any out. Acute glomerulonephritis usually occurs in childhood. It is a sensitivity of the kidneys to some extrarenal infection, especially an upper-respiratory infection. We know specifically that it is due to infection with Group A, beta hemolytic Streptococci, especially types 4 and 12. About 10 to 14 days after this infection, marked by fever, sore throat, difficulty in swallowing and usually swollen glands in the throat, the symptoms appear. However, the laboratory data are valuable when we begin to think of acute glomerulonephritis. The specific gravity of the urine in the early stages usually is quite high because the tubule function is less impaired than the glomerular filtration and because the volume of urine is so small that the specific gravity will be good. Later it may drop. Usually patients have only moderate elevations of blood pressure, but about 10 per cent of them will have every definite hypertension. Heart failure comes on later, and most likely is secondary to hypertension and hypervolemia. About 85 to 90 per cent of these children get well when treated with adequate bed rest. About 5 per cent develop uremia.

Thus it doesn't seem that this case could have been acute glomerular nephritis. The patient's specific gravity wasn't good. I assume that he didn't get well since this is a CPC. He was a little old for glomerular nephritis, though it has been reported anywhere from infancy to 60 or more years of age. Anyway, I think the bulk of evidence would be against a glomerular nephritic process.

Chronic glomerular nephritis usually is an outgrowth of the acute glomerular form. There is a separate type, however, called Type 2 nephritis, which is thought to arise *de novo*. Sometimes the antecedent history is so minimal as to be ignored. Maybe only some microscopic hematuria is present to indicate some previous glomerular nephritic process. Sometimes an upper-respiratory infection will rekindle it and set it off. It may start out as a nephrotic syndrome.

The nephrotic syndrome, as you will recall, means the presence of protein in the urine, with edema to the point of anasarca, hypoalbuminemia with elevated globulin (especially the alpha and beta globulin with the gamma globulin decreased), some disorder of fat metabolism in that cholesterol and lipids are elevated, and a decrease of plasma amino acids. Usually, in the nephrotic syndrome, the blood pressure is normal until very late in the disease. The BUN is normal until terminally when patients develop uremia. The specific gravity usually is good, because of the terrific amount of albumin present in the urine.

Whenever there is chronic renal disease in the presence of hepatomegaly or splenomegaly, one must think of amyloidosis. This would be diagnosed by a biopsy or by Congo-red tests, neither of which have been mentioned in this protocol.

Lupus erythematosus is a possibility. Some people may go up to 12 years with some single manifestation such as anemia, arthritis or purpura before they develop a full-blown case or enough symptomatology to justify a diagnosis of lupus erythematosus. The L-E cell test on which we rely quite a bit, or the antinuclear factors in the cells, may be positive only during the exacerbation. Sometimes one can find the cells, but cannot diagnose the case clinically.

Polyarteritis is another possibility in this case. Classically, in such a case, one finds a "telescoped urine." This hasn't been described for us. We would also find eosinophilia which hasn't been mentioned here.

I would think the greatest possibilities in this case would be chronic glomerular nephritis or collagen disorders, especially lupus erythematosus or polyarteritis.

We know that the patient had uremia because he had anemia. He had acidosis, and with the finding of an elevated creatinine he must certainly have had an elevated BUN and thus azotemia. Whenever one finds these three A's—i.e., anemia, acidosis and azotemia, there is uremia. This puts the patient into a chronic category. We know this boy had an ulcer, or at least one was indicated on X-ray. He had some blood in his stools which would indicate uremic bleeding or bleeding from the ulcer. Massive gastrointestinal hemorrhage may raise the BUN somewhat, so it would have to be taken into account. The fact that the creatinine was elevated indicates that this was a chronic case. He had a hepatomegaly. This is not finding in glomerular nephritis, but rather it is a finding of a collagen disorder, as was the complaint of arthralgia. The decreased serum iron indicates chronicity. The recent upper-respiratory infection (even though the ASO titer was less than 150 Todd units) might be important. Two LE-cell preps were negative.

This case had many ramifications. As I have gone over these possibilities, you can see that the data actually are somewhat insufficient. We could say,

however, that this boy had a duodenal ulcer and that it probably had bled. We know that he had pulmonary emphysema and fibrosis. He may have had a hiatal hernia. He certainly has chronic renal insufficiency, but I don't believe we can diagnose its actual cause. I suspect that it was mostly due to chronic glomerular nephritis that was lit up by respiratory infection. It was quite possibly due, or could have been due, to disseminated lupus erythematosus. I don't believe that he had a nephrotic syndrome due to any specific infectious etiology.

My first diagnosis would be chronic glomerular nephritis. My second would be lupus erythematosus.

J. L. Molchan, M.D., resident in surgery: What type of syndrome would you expect to find with edema around the face?

Dr. From: It would be more of a nephrotic syndrome. The patient didn't seem to have enough edema and that sort of thing, however, for that.

AUTOPSY FINDINGS

Dr. Song: You are right, Dr. From. This is a difficult case with somewhat restricted data on which to go.

An autopsy was performed on this patient approximately three hours after death. His cardiovascular system was essentially unremarkable, having a mild degree of coronary sclerosis. His heart weighed 320 Gm. There were no valvular lesions or myocardial changes. The aorta showed a slight atherosclerotic change, with remarkable atheromatous plaques on the walls of the aorta. The major branches of the aorta were patent and contained no thrombo-emboli.

Both lungs were quite heavy and edema was quite extensive in them. There was some fibrosis and marked bullous emphysema on both apices.

The spleen weighed 150 Gm. and was unremarkable, as were the mesenteric lymph nodes.

The bone marrow was quite red, indicating a mild to moderate degree of hyperplasia.

The urinary tract was very interesting in this case. Both kidneys were quite swollen, although there were same fine granular scars present in both kidneys, and we could actually see ecchymotic hemorrhages on the cortexes of both kidneys. This was rather unusual for chronic glomerulonephritis because of the multiple ecchymotic changes which were readily seen on the surfaces of both kidneys. The patient did have a duodenal ulcer from which a considerable amount of blood emerged into the intestinal tract, causing the positive guaiac test which was mentioned.

The first slide I should like to show you is a section of the kidneys. A fairly large blood vessel, which we interpret as a medium-sized artery, shows us an extensive necrosis. The smudged area which is so-called "fibrinoid necrosis of the vessel wall," is surrounded by a number of eosinophilic leukocytes. This represents an acute necrosis of the wall of the artery, with cellular infiltration composed of primary eosinophilic leukocytes and a small number of neutrophilic leukocytes (Figure 1).

The next slide is a fairly large vein of the kidneys. Again you can see an extensive fibrinoid necrosis involving the wall of the veins, and there is a massive infiltration of eosinophilic leukocytes which you can readily see in the lower portion of this slide. Notice the surrounding tubules which also are affected by necrotic and inflammatory processes showing atrophy or complete disappearance of the small tubules. Both afferent and efferent capillaries of the glomeruli were also affected by necrotic processes of the fibrinoid type. Thus in these kidneys we could see the evidence of an acute inflammation of the small arteries and veins characterized by an extensive fibrinoid necrosis and massive eosinophilia. There also were several glomeruli which showed fibrosis and had a so-called "crescent moon" appearance.

The next slide is a section taken from a lung. As you can see here, the small arteries were involved, and it shows the perivascular mesenchymal cell proliferation.

The next slide is a vein of the lung, and it shows more or less adventitial inflammation.

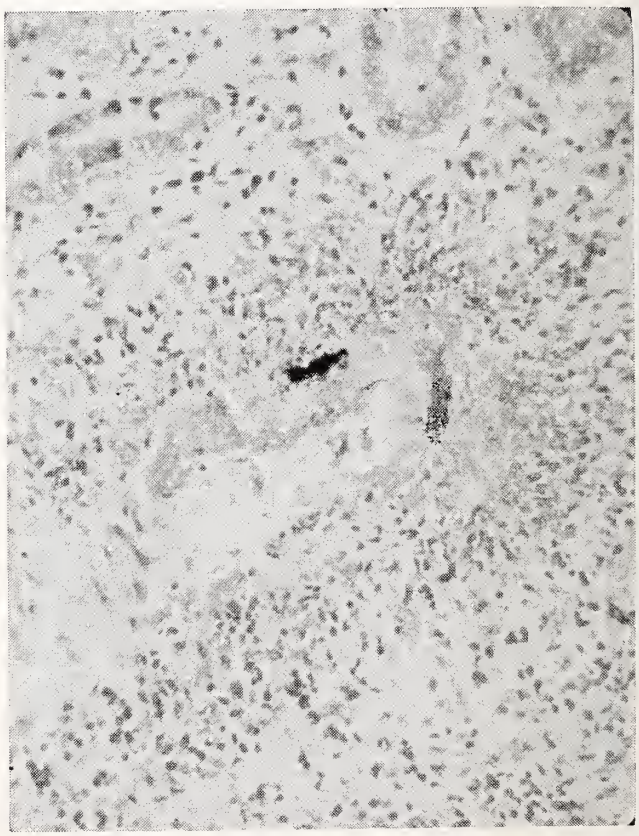


Figure 1

So in this patient we are dealing with some type of acute inflammatory process, mainly involving small arteries and veins of both kidneys but also involving both lungs, and resulting in fibrosis and patchy areas of bronchopneumonic processes.

If you recall, the first slide which was taken from a kidney showed us the acute fibrinoid necrosis involving the veins and small arteries, so we undoubtedly are dealing with a so-called "polyarteritis nodosa," or the inflammation involving the renal veins and arteries which Dr. From mentioned.

The next slide shows us classical pictures of inflammation involving the vessels.

Now, our task is to review these six different categories and try to fit our case into one of these entities.

1. *Classic polyarteritis nodosa* is a progressive disease involving medium-sized arteries, particularly in the gastrointestinal tract, kidneys, and muscles, and manifested clinically by fever, muscle pains, high blood pressure, renal disease, gastrointestinal disorder and neuropathy. In this case we do not have a record of any fever, nor of hypertension, but this could very well be a polyarteritis nodosa.

2. *Hypersensitivity polyangiitis* is a subdivision of polyarteritis nodosa and is characterized by an acute inflammatory reaction in the small vessels, particularly to the heart, lungs and kidneys, usually terminating with renal failure. This is an entity that we thought this case would fit into.

3. *Rheumatic arthritis* represents an inflammation of the small arteries of the heart and lungs in association with severe rheumatic fever. There was no history of rheumatic fever in this case.

4. *Granulomatous angiitis* is characterized by vascular lesions and granulomatous proliferation with eosinophils and giant cells. It presents with diffuse systemic and severe respiratory symptoms. Histologic findings in our case contraindicate this condition.

5. *Temporal arteritis* is a localized disease involving the cranial arteries, and we can readily rule it out on the basis of anatomical changes.

6. Finally, there is a miscellaneous group of diseases which includes the vascularities occurring in association with rheumatoid arthritis, systemic lupus erythematosus and other connective-tissue diseases. I believe this could be our case.

Let us review the polyarteritis nodosa entity. The best article written on this subject is perhaps a paper published by Zeek, an American pathologist. She established three periods for this disease entity. The first period was from 1866 to 1900, roughly about 34 years. In 1852 Rokitansky, a famous German pathologist, reviewed a case which Eppinger had diagnosed as periarteritis nodosa. Eppinger, as we all know, was a famous internist and pathologist in Germany. The case described by Eppinger was a rather classic one having multiple aneurysms filled with thrombi. Then in 1866, Kussmaul and Maier first described this condition as an independent disease entity. Since that time, numerous cases have been reported. In 1899 Freund made a detailed observation based on clinical and anatomic records. According to him there are widespread nodular lesions involving multiple organs, and the characteristic features are fibrinoid necrosis and inflammation in the media or adventitia of the arteries.

The second period included about 25 years beginning in 1900. In this second period, you may note from this table, the people tried to establish a morbid anatomy for this disease. According to an article published in 1890, Lüpke reported that this disease had also been seen in certain types of animals, including deer, pigs, hogs, etc. The term "polyarteritis acuta nodosa" was suggested by Dixon in 1908. In 1914 an English pathologist attempted to produce it experimentally, but was unsuccessful. In 1923 Ophüls reported an extensive study on 10 postmortem records. According to him the extensive involvement of small arteries and veins in the lungs with heavy infiltrations of eosinophilia was unique, but no bacteria were found. Extensive involvement of veins and small arteries and eosinophilic infiltration into the spleen, lymph nodes and mucous membranes were apparent. But Ophüls failed to discover the lesions involving the gastrointestinal tract.

In the third period, which was from 1925 to 1952, people attempted to produce or reduplicate the lesion by experimental measures, and were successful in producing this disease by utilizing materials such as horse serum, hypersensitivity agents, etc. Thus we know that this disease is a hypersensitivity status due to unknown causes.

The next slide will show us the postmortem findings of polyarteritis nodosa and its related diseases. In about 70 per cent of polyarteritis nodosa cases, the terminal mesenteric arteries and the gastrointestinal tract were involved. In almost half of the patients the liver was involved, and two cases of hepatitis were found. The muscle biopsy revealed evidence of inflammations in about 40 per cent, and of arthritis in 27 per cent. The spleen was frequently involved in this disease—in about 16 out of 39 cases. There were also two cases in which this disease involved the cerebral arteries. Skin manifestations were also reported in about 27 per cent, and a correct clinical diagnosis was reached in about 31 patients, but usually there was a delay. Half of the untreated patients died within six months. This indicates that in those days (in 1957), the patients with polyarteritis nodosa ultimately developed a terminal renal failure in about six months.

Now, what about the etiology of this disease entity? The disease was attributed to hypersensitivity status. Hypersensitivity can cause necrotizing vascular changes in the small arteries and

veins. This has been substantiated by repeated experiments. No clinical evidence of allergy in classical cases was measured. In 1930, Arkin came up with an idea that this lesion is the product of a virus infection. I believe we can rule out the virus infection theory, for there were no virus particles demonstrated under the electromicroscope.

Preceding repeated respiratory infections as causal agents received further support. Infections preceding the onset of the disease were found in 25 per cent of the cases in which a chronic respiratory infection was demonstrated. Ten per cent of these patients had a bronchiectasis, and 12.5 per cent had active rheumatic fever or rheumatic-fever histories. This is fairly vague, but is definitely suggestive that this disease is of hypersensitivity origin.

FINAL DIAGNOSIS

(1) Hypersensitive polyangiitis involving kidney and lungs

(2) Fibrosis and patchy bronchopneumonia, bilateral

(3) Duodenal ulcer

(4) Uremia

I realize that our presentation has been imperfect. A number of facts were missing from the protocol, but, nevertheless, we felt that this was a case of polyarteritis nodosa and specifically that it was a hypersensitive polyangiitis. The fact that your protocol made no mention of eosinophilia is a mystery for which I have no proper explanation.

Dr. From, will you comment?

Dr. From: Well, I would think of it as a collagen disorder, but because of the lack of the eosinophilia, not polyarteritis.

This is a very interesting case.

Dr. Molchan: What might be the mechanism for the occurrence of facial edema in such a patient?

Dr. From: Well, the reason for edema in these chronic glomerulonephritides is uncertain. We don't know whether it is a widespread involvement of the capillaries with some hypersensitivity mechanism—the same mechanism which goes on in the glomerulus itself—or whether it is a combination of heart failure, hypervolemia, hypernatremia and that sort of thing. It is very interesting that edema usually occurs first in the upper parts of the body, rather than in the dependent parts as one would normally expect. Nobody has ever been able to settle this controversy. The nearest theory is that it is a hypersensitivity of these small blood vessels just as in the kidney.

REFERENCES

Rose, G. A.: Natural history of polyarteritis, British Med. J., 2:1148-1152, (Nov. 16) 1957.

Churg, J., and Strauss, L.: Allergic granulomatosis, allergic angiitis, and periarteritis nodosa, Am. J. Path., 27:277-301, (March-April) 1951.

Autoimmune Disease

GILES A. KOELSCHE, M.D., and
GEORGE R. GREEN, M.D.
Rochester, Minnesota

IN AN AUTOIMMUNE DISEASE, antibodies or sensitized cells damage or destroy the patient's normal cellular constituents, or tissues that have been altered by various factors presently to be mentioned. Autoimmunization differs from other immunologic reactions in that there is no introduction of foreign protein into the organism. The clinical picture that is produced depends upon the organ which the autoantibodies have attacked.

CLASSIFICATION

As yet, there is no general agreement as to the basic mechanism responsible for the development of autoimmune diseases, but there are workable theories, and a classification of such disorders can be based upon them.[11]

Primary Autoimmunization. In this type, the defect is in the mechanism which controls the normal process of antibody production. According to the clonal-selection theory, a forbidden clone is triggered to activity, possibly by developing resistance to the usually normal genetic (intrathymic?) control, and thus begins to produce abnormal globulins which accumulate and lead to the destruction of normal target tissue. The autoimmune diseases of this type include systemic lupus erythematosus, some types of acquired hemolytic anemia with their erythrocyte antibodies, some cases of idiopathic thrombocytopenic purpura with platelet antibodies, and rheumatoid arthritis with antigamma globulin antibodies.

Secondary Autoimmunization. There are two categories of this type. In the first, autoantibodies are produced against tissues or structures that are anatomically segregated under normal conditions

Dr. Koelsche is a staff member and Dr. Green is a resident in the Section of Medicine at the Mayo Clinic and Mayo Foundation. Dr. Koelsche read this paper at the 1965 annual meeting of the Iowa Medical Society.

of bodily function and thus are incapable of contact with immunologically competent cells. Substances in this category are thyroglobulin, myelin, the lens of the eye and spermatozoa. Lesions—for example, surgical ones—that lead to a breakdown of the usual isolating barrier permit these substances to come in contact with immunologically competent cells, and thus stimulate production of highly organ-specific autoantibodies against them. Examples of the autoimmune diseases that might result include Hashimoto's thyroiditis, sympathetic ophthalmia, and some cases of acute encephalomyelitis and azoospermia.

In the second, the autoantibodies are produced because the antigenicity of the cells in the structure involved has been altered by viruses, bacteria, enzymes or chemicals, or by physical agents like x-rays or heat. Because of the altered antigenicity in the cellular constituents of the tissue concerned, the immunologically competent cells fail to recognize the changed ones as "self," and begin to produce autoantibodies against them. Examples of autoimmune diseases that may result include hemolytic anemia of viral disease, glomerulonephritis and Sedormid purpura. In the last of these disorders, the antibody usually is directed mainly against the antigenic determinant provided by the hapten, and thus, strictly speaking, it can't be regarded as autoimmune. However, the immunologic response also can effectively involve the host's protein to which the drugs have become attached, and thus it justifies its autoimmune designation.

POSTULATES OF AUTOIMMUNE ETIOLOGY FOR A DISEASE

Humphrey and White suggest that a disease having an autoimmune etiology should satisfy the following requirements:

1. The immune response (demonstration of antibodies that are active at body temperatures, or of sensitization of tissues to an autoantigen) should be found at some stage in all cases of the disease in question.

2. The antigen, preferably isolated in a pure form, should be capable of inducing the lesions of the disease following injection into an experimental animal.

3. One should be able to produce the disease in a normal animal by transferring to it some antibody in serum or some immunologically potent cells in suspension taken from sources such as lymph nodes, spleen, bone marrow and inflammatory exudates.

As of now, unfortunately, it is impossible to satisfy these postulates in many of the diseases which today are regarded as autoimmune. For example, it hasn't been possible to demonstrate autoantibodies in some of them, and conversely, the detection or autoantibodies doesn't establish the presence of an autoimmune disease; the individual in whom they are found may be perfectly healthy.

MECHANISMS IN AUTOIMMUNE DISEASE

Waksman has reviewed the mechanisms by which lesions come about in autoimmune disease. First, there may be cytotoxic action, with direct lysis of the cells or tissue elements by humoral antibodies. This has been well documented in cases of acquired hemolytic anemia, chronic leukopenia and idiopathic thrombocytopenic purpura. Passive transfer of serum containing antibodies of this type, or passage of them across the placenta, results in destruction of the target cells of the recipient. Further, he says it is possible that the lesions of human vascular endothelium will be shown to be due to direct cytotoxic action of its specific antibody.

The second way in which autoantibodies may act is by direct neutralization of physiologically important substances circulating in the body fluids. Thus, an autoimmune mechanism may be the explanation for the recurring hyperglycemia that some diabetic patients experience despite huge doses of insulin. The explanation may be that this hormone is inactivated by autoantibodies that combine with it. Likewise, there may be a similar reason for regarding pernicious anemia as an autoimmune disease. There is evidence to suggest that in some patients with this condition, the intrinsic factor is neutralized by autoantibodies.

The third way in which Waksman says that lesions of autoimmune diseases may be produced is the formation of antigen-antibody complexes in or near vessel walls, resulting in vascular and thus tissue damage. The tissue changes which result resemble the Arthus reaction. Acute glomerular nephritis may develop in this way in man. Lesions similar to it have been produced in rabbits by injecting antiserum to their glomerular basement membrane. There is evidence to suggest that the lesions of polyarteritis nodosa are caused by a similar mechanism.

The fourth way in which lesions of antoimmune diseases may come about is the direct action of cellular antibodies on the target tissue. The cells active in this respect are medium to large lymphocytes and histiocytes. A cytopathogenic effect that these have on thyroid cells and peripheral-nerve myelin has been observed in tissue-culture studies. This is a likely mode of action for autoantibodies in the production of Hashimoto's thyroiditis and demyelinizing disease.

AUTOIMMUNITY IN LABORATORY ANIMALS

Before discussing briefly several diseases in which autoimmune factors may play a role, we wish to review some of the work that has been carried out on laboratory animals in the investigation of problems of autoimmunity. Witebsky ob-

served that three of the major autoimmune disorders seen in man—namely, allergic encephalomyelitis, chronic thyroiditis and aspermatogenesis—have been induced in animals. He stated that these experimentally produced diseases are very specific, inasmuch as they can be elicited only when the corresponding tissue is used for immunization. For this process, the material injected has usually been incorporated into complete Freund's adjuvant.

Waksman pointed out that tissues which have been used to induce autoimmune diseases, in well-documented animal studies, include lens, tissue from the uveal tract, myelin from the central and peripheral nervous system, thyroid, testis, adrenal, skin, kidney and gastric mucosa. Injection of such material—in some cases with and in others without adjuvants—has led to the formation of humoral and cellular antibodies with lesions in and corresponding to the tissue used.

The basic immunologic model, which probably is the animal counterpart of human demyelinizing diseases, is experimental allergic encephalomyelitis. This condition can be induced in rats and several other laboratory animals by single or repeated injections of mammalian brain or spinal cord emulsified in Freund's adjuvant. Clinical signs of disease of the central nervous system appear two to three weeks after the animals receive the injections.

Many studies had suggested that this disorder had an immunologic mechanism, but it remained for Paterson to establish this idea by transferring the disease from affected rats to healthy rats by means of lymph-node cells. The success of his study was based on the concept that extended survival of donor cells in the recipients might be the key factor in the transfer. Newborn rats were pretreated with pooled normal spleen cells from splenectomized adult donor rats. Five or six weeks later, the donor rats were injected with guinea-pig spinal cord in adjuvant. Lymph-node cells were collected from the donors seven to 12 days later. The lymph-node cells were pooled, washed and injected intravenously into the pretreated and now immunologically tolerant adult recipient rats. All recipient rats were deliberately sacrificed within six to eight days after the lymph-node cell transfers, and their brains and spinal cord were examined for histologic evidence of encephalomyelitis. It was found in 14 of 22 animals. The lesions of the central nervous system in the positive recipients were indistinguishable from those of acute allergic encephalomyelitis found in the rats that had been injected with spinal cord and adjuvant. Because of the immunologic tolerance of the recipient rats which had been induced by pretreatment with donor spleen cells, the transferred immune lymphoid cells were able to survive long enough to mount an effective attack on the recipients' brains and spinal cords, and not to be destroyed by a homograft-rejection reaction.

AUTOIMMUNE OR POSSIBLY AUTOIMMUNE DISORDERS IN MAN

Multiple Sclerosis and Encephalomyelitis. It is likely that autoimmune mechanisms are responsible for the comparable demyelinizing human diseases, namely multiple sclerosis and the encephalomyelitis that may be set off by diseases like measles, chickenpox, smallpox and German measles. The available evidence makes it almost certain that the encephalomyelitis that may follow anti-rabies treatment is a replica of experimental allergic encephalomyelitis. Finally, there is a type of encephalitis that rarely follows vaccination with vaccine virus, and that is indistinguishable from that which has accompanied anti-rabies treatment.

Normal human cerebrospinal fluid contains 20 to 40 mg. of protein per 100 ml., and about 3 mg. of that protein is gamma globulin. However in multiple sclerosis, the gamma globulin may account for 20 to 40 per cent of the total protein content. This increase, of course, suggests a process with enhanced antibody production. Experimental evidence suggests that the central nervous system and peripheral nerves each contains a substance antigenically specific and not common to the other. Multiple neuronitis may have an autoimmune mechanism.

Endophthalmitis Phacoanaphylactica. This is a severe intraocular inflammatory response set off by an autoimmune reaction. Some of the lens protein, ordinarily inaccessible, escapes into the anterior chamber at the time that a cataract is extracted. Probably in the presence of staphylococci or other microorganisms that act as adjuvants, this leads to the formation of antibodies, which in turn produce the local reaction characteristic of the disease. Burkey was able to sensitize rabbits to lens protein by injecting the animals with this material together with staphylococci. Thereafter, if the lens were needled and protein thus released from it, the animal developed endophthalmitis phacoanaphylactica.

Lupus Erythematosus. For some years, systemic lupus erythematosus has been considered to be of autoimmune origin. The sera of patients afflicted with it contain an abnormal gamma globulin of the 7S variety with antinuclear, anti-blood cell and anti-clotting properties. It will pass across the placenta in a pregnant woman without producing visible damage in the child. It will cross-react to antiserum to normal gamma globulin, and will react with white blood cells in vitro to produce lupus erythematosus cells. Rabbits immunized with this abnormal gamma globulin develop specific antibodies against it which, when mixed with lupus erythematosus serum, will prevent the production of lupus erythematosus cells *in vitro* as just described.[5] Studies have shown that the lupus erythematosus factor behaves like an autoantibody to all nuclei and to desoxyribonucleic acid (DNA). The administration of drugs like hydrala-

zine (Apresoline) and penicillin has led to sensitization in some patients, and thus has triggered the autoimmune mechanism, bringing about the development of the systemic lupus erythematosus picture.

Rheumatoid Arthritis. The demonstration of the rheumatoid factor in the sera of patients afflicted with rheumatoid arthritis has heightened speculation as to the autoimmune nature of this disease. It has now been shown that the rheumatoid factor circulates in the blood as a complex of globulins with a sedimentation coefficient of 22S. This complex can be dissociated into 19S rheumatoid factor (macroglobulin) and 7S normal gamma globulin. The present hypothesis is that the rheumatoid factor reacts with some component of gamma globulin, but that in normal serum there is an inhibitor of this reaction. The antigenic material is thought to be DNA protein, altered possibly by streptococcal disease and thus becoming antigenic. By the fluorescent-dye technic, globulin of patients with rheumatoid arthritis has been shown to combine with nuclear material of tissue cells.[7] Available evidence indicates that the rheumatoid factor has features of an autoantibody.

Acquired Hemolytic Anemia. In this condition, the serum contains an abnormal hemolysin, and the erythrocytes are coated with human globulin. An important difference between the congenital and the acquired form of hemolytic anemia is revealed in a study of the survival of red blood cells transferred to normal persons and to patients with acquired hemolytic anemia. The spherocytic erythrocytes characteristic of the congenital form exhibit a diminished life span even in healthy subjects, suggesting that the disorder rests in the cells rather than in the serum. The cells of the acquired type have their usual normal life span in healthy recipients with compatible blood groups, but normal erythrocytes are destroyed when transferred into patients with acquired hemolytic anemia, indicating that in this type the hemolytic factor is in the patient's serum. It is notoriously difficult to find suitable donors for such patients, for they often react violently to any transfusion of blood.[7] The pathogenesis of the development of the autoantibodies in this disease is uncertain.

Reactions to Leukocytes. Antibodies against leukocytes may develop in patients receiving transfusions repeatedly. These may lead to febrile reactions, without destruction of erythrocytes, following transfusions. These reactions can become real problems in patients requiring many transfusions over a long period, as for example in one with aplastic anemia. In such instances, only by transfusing washed erythrocytes can such reactions be avoided. An antinuclear factor has been detected in the sera of patients with Felty's syndrome, and this may be the cause of the leukopenia associated with that disease.

Purpuras. The concept of an autoimmune mechanism in some purpuras may have been motivated by studies done in 1921 by Bedson. He showed that in guinea pigs the platelet counts could be reduced greatly by intraperitoneal injection of a rabbit antiserum for guinea-pig platelets. Also damaged in the same animals was the vascular endothelium.

The plasmas of patients with idiopathic thrombocytopenic purpura will lyse platelets from a normal or a purpuric individual. They also will lower the platelet counts of rabbits. Harrington and associates injected blood plasma from patients with idiopathic thrombocytopenic purpura into normal healthy persons and produced a marked lowering of the platelet counts in the latter. What causes patients with this type of purpura to develop antibodies to their own platelets hasn't been established, but it would seem to be a type of autoimmune response. Possibly the most substantial evidence supporting the role of antibody in this disease is the occurrence of transient thrombocytopenia in the infants of mothers who have or have had idiopathic thrombocytopenic purpura.

Hashimoto's Thyroiditis. This is thought to be an autoimmune disease. The normal acinar tissue is replaced completely by massive collections of cells which are largely lymphocytes and plasma cells. The antibodies present are directed mainly against thyroglobulin, which under normal conditions is anatomically segregated; that is, it doesn't come into contact with immunologically competent cells. What process leads to its egress from the thyroid acini and its subsequent alteration so that it becomes antigenic isn't definitely known. The fluorescein conjugate of the globulin fraction of serum from a patient with Hashimoto's thyroiditis will bind with thyroglobulin from a normal thyroid.

Azoospermia. Azoospermia in man, including the type that follows orchitis secondary to mumps, probably is contingent on an autoimmune mechanism. Antibodies against sperm in cases of human sterility can rarely be found, although they can easily be demonstrated in experimentally induced testicular destruction in guinea pigs. About 80 per cent of cases of mumps occur before the age of 15 years. The incidence of orchitis in this larger group is only 1.5 per cent. By contrast, 20 per cent of the patients who have mumps after puberty develop orchitis, and complete atrophy of the affected testicle occurs in one-third of these. Bilateral atrophy leading to complete sterility occurs in one out of 10 cases of orchitis in the adult group. It seems probable that the mumps virus damages the testicle in some way, permitting the seminal fluid, normally anatomically isolated, to come into contact with immunologically competent cells, thus leading to the formation of autoantibodies against the sperm.[7]

Acute Glomerulonephritis. A disease closely resembling acute glomerulonephritis in man has been produced in rabbits by Masugi. This, he accomplished by sensitizing ducks to an emulsion of

rabbit kidney. Thereafter, injecting the antirabbit-kidney duck serum intravenously into rabbits caused the disease to develop five to seven days later. In man, acute glomerulonephritis is known to occur seven to 15 days after an acute upper-respiratory infection, especially the type caused by group A hemolytic streptococci. It is theorized that the microorganisms somehow lead to the formation of autoantibodies that localize in the renal glomeruli. A reinfection is known to cause an exacerbation of the glomerulonephritis within two or three days—the so-called anamnestic response.

Myasthenia Gravis. A growing body of evidence suggests that myasthenia gravis comes about by means of an autoimmune mechanism. By the fluorescein labeling technic, circulating antibodies against various nuclear components have been demonstrated in the sera of patients afflicted seriously with this disease. Thymic hyperplasia, which is found frequently in myasthenia gravis, is being linked by much clinical and experimental data with disorders of immune processes. The coexistence of erythroid hypoplastic anemia with myasthenia gravis and acquired hypogammaglobulinemia is noteworthy. The muscle cells are the targets for the autoimmune antibodies. Local collections of lymphocytes, histiocytes and occasional plasma cells have been noted in the muscle tissue. Rubin and associates considered it possible that both the morphologic changes in the thymus and the several disorders mentioned are expressions of a single immunologic disturbance.

Rheumatic Heart Disease. An autoimmune mechanism may be involved in the pathogenesis of rheumatic heart disease. Circulating autoantibodies against myocardial antigens from either normal or rheumatic heart muscle have been found in the sera of patients afflicted with rheumatic fever. It has been postulated that streptococcal toxins cause the original myocardial damage, altering the antigenicity of the cardiac muscle, and thus setting off the acute production of antibodies. On the other hand, it has been found that certain strains of group A streptococci contain antigenic material in their cell walls, which is cross-reactive with human cardiac myofibers and with smooth muscle of endocardium and vessel walls. Thus the antibodies against these streptococci could attack the cardiac muscle directly. After undergoing cardiac surgery, a much higher proportion of rheumatic-fever patients are found to have autoantibodies in their sera, and this finding suggests that the antibodies may be a consequence rather than the cause of myocardial damage.[7]

Chronic Ulcerative Colitis. Immunologic investigations in chronic ulcerative colitis recently have drawn attention to the presence of antibodies in the patients' sera to colonic extracts. Explanations for these changes remain highly conjectural.[1] There are many references in the recent literature to an association of chronic ulcerative colitis and other diseases with a presumed or a possible autoimmune basis, such as rheumatoid arthritis or spondylitis, and systemic lupus erythematosus.

Juvenile Hepatic Cirrhosis. Calnan observed recently that juvenile hepatic cirrhosis, which is not infrequently associated with chronic ulcerative colitis, is also probably an autoimmune disorder. The skin lesions are believed to be replicas of those occurring in the liver—i.e., heavy infiltrations of the portal spaces by mononuclear cells, histiocytes and eosinophils, as well as degenerative changes. Laboratory findings include hypergammaglobulinemia, eosinophilia and the presence of antinuclear autoantibodies.

Neoplasms. Finally, the survival of neoplasms may be dependent on the failure of the body to mount an autoimmune attack. They may develop and grow because the mutant cell from which they started wasn't different enough antigenically from normal cells to enable to the body to recognize it as foreign, and thus produce autoantibodies in amounts sufficient to contain and destroy it.

CONCLUSION

It is beyond the scope of this presentation to consider all of the disorders for which autoimmune mechanisms have been suggested. Thus far, recognition of such mechanisms hasn't simplified the therapeutic problems that they pose, but it is to be hoped that continuing research will ultimately facilitate the effective treatment of diseases in this category.

REFERENCES

1. Asboe-Hansen, G.: "Allergy and Collagen Diseases." In: V Congreso Internacional de Alergologia. Madrid, Editorial Paz Montalvo, 1964, pp. 463-467.
2. Bedson, S. P.: Quoted by Cooke, R. A.[5]
3. Burkey, E. L.: Quoted by Boyd, W. C., In: Fundamentals of Immunology, Third Ed. New York, Interscience Publishers, Inc., 1956, p. 473.
4. Calnan, C. D.: "Autosensitization and Skin Disease." In: V Congreso Internacional de Alergologia. Madrid, Editorial Paz Montalvo, 1964, pp. 413-418.
5. Cooke, R. A.: Research in field of allergy. J. Allergy, **31**:273-282, (May-June) 1960.
6. Harrington, W. J., Minnich, Virginia, Hollingsworth, J. W. and Moore, C. V.: Quoted by Boyd, W. C.: Fundamentals of Immunology, Third Ed. New York, Interscience Publishers, Inc., 1956, p. 473.
7. Humphrey, J. H. and White, R. G.: Immunology for Students of Medicine. Philadelphia, F. A. Davis Co., 1963, pp. 321-324, 405-407.
8. Masugi, M.: Quoted by Prigal, S. J., In: Fundamentals of Modern Allergy. New York, McGraw-Hill Book Co., Inc., 1960, p. 384.
9. Paterson, P. Y.: Transfer of allergic encephalomyelitis in rats by means of lymph node cells. J. Exper. Med., **111**: 119-136, (Jan. 1) 1960.
10. Rubin, M., Straus, B. and Allen, L.: Clinical disorders associated with thymic tumors. Arch. Int. Med. (Chicago), **114**:389-398, (Sept.) 1964.
11. Serafini, U.: Practical aspects of auto-immunization. Acta Allerg., **18**:455-461, 1963.
12. Waksman, B. H.: "Auto-immunization and Lesions of Autoimmunity." In: V Congreso Internacional de Alergologia. Madrid, Editorial Paz Montalvo, 1964, pp. 457-462.
13. Witebsky, E.: "Meaning of Autosensitization in Human Pathology." In: V Congreso Internacional de Alergologia. Madrid, Editorial Paz Montalvo, 1964, pp. 455-456.

Suicide: A Continuing Problem

MAURICE J. MARTIN, M.D.
Rochester, Minnesota

A 36-YEAR-OLD, ATTRACTIVE, bleached-blonde mother of two adolescents had been a patient in psychotherapy for almost four years, and had made approximately eight previous "suicidal gestures." One midafternoon, after a noontime spat with her petulant and equally immature husband, she telephoned me and in a weak voice said, "I'm coming apart again. I can't stand it. Do something!" We talked on the phone for a few minutes about her altercation with her husband, her seemingly perpetual frustration and her plans for volunteer work the next day. I told her that being hospitalized wasn't the answer to her plight, although it was obvious to me that hospitalization was what she wanted. She seemed to become much more organized and relaxed, and we agreed that she should keep her scheduled appointment on the next day.

Forty-five minutes later, I received a frantic call from her 12-year-old daughter: "Mother's cut her wrists and is bleeding on our new $600 carpet!" I suggested some emergency pressure dressings, and called the patient's husband at work. He hurriedly took her to the hospital emergency room, where the lacerations were sutured, and she was admitted to the psychiatric unit of the hospital. Thus, the patient achieved her goal of hospitalization as a retreat from the stresses of her home life.

A second example was a 68-year-old retired milkman who recently was admitted to the closed psychiatric unit after ingesting approximately 30 capsules of secobarbital. The suicidal attempt had taken place in the early morning of the day following his wife's funeral. He and his wife had been quite dependent on one another, the dependence being heightened by the man's retirement and his continued remorse concerning a childless married life. His wife had died in his arms after a prolonged illness, during which he had cared for her every need. He might have died from the overdose of barbiturate, had not a sympathetic neighbor chanced to visit him early on that fateful morning.

Dr. Martin, a member of the staff in the Section of Psychiatry at the Mayo Clinic, read this paper at a meeting of the Wapello County Medical Society, in Ottumwa, on October 6, 1964.

Emergency treatment prevented deeper coma and almost certain death. Psychiatric evaluation was difficult, partially because of the patient's chagrin at the failure of his suicidal attempt. He was encouraged to vent his feelings regarding his recent grief, and after 10 days in the hospital, he seemed to have overcome his depressive ruminations. On the day of his dismissal, he prophesied to a nurse, "You won't see me again," and he soon made certain that she wouldn't. Within 12 hours after his dismissal from the hospital, he loaded his 12-gauge shotgun, propped it against his temple and pulled the trigger.

I present these two cases from my own recent experience to demonstrate some of the possibilities of suicide—a continuing problem. Fortunately, much research has been done on the subject of suicide in recent years, and we are now able to clarify and dispel many of what heretofore have been uncertainties about it.

WHY PEOPLE COMMIT SUICIDE

There are many reasons why a person may decide to take his own life. Probably the commonest of the phenomena noted in those who actually commit suicide is depression. The seriously depressed person may feel that his life is not worth living. He may feel hopeless and helpless, and to his way of thinking, death is the only relief from his symptoms.

Any attempt at suicide constitutes a "cry for help." Some people view a suicidal attempt as a futile and sometimes dramatic way of summoning help or of attracting attention. Such an attempt usually is the impulsive gesture of the scorned lover, angry adolescent, disappointed businessman or frustrated actor. It is often the manipulative act of an immature person who is trying to persuade someone in a neurotic way.

Occasionally patients with serious illnesses—especially those in constant pain from an incurable disease—will see no other way to relieve their suffering than by taking their own lives, but these people constitute a minority of suicidal victims. It seems that most people cling to hope and prefer to let their fatal disease take its natural course. Religious and moral convictions seem to have a bigger part in preventing suicide in these patients than in those with depression or impulsive gestures.

Sometimes suicide results from the psychotic mentation of schizophrenics. Although cases of

suicide with schizophrenia may be dramatic, statistically they are rather infrequent.

Several theories have been proposed to explain suicidal thinking from the psychiatric viewpoint. None of these theories reveal suicide as a distinct or discrete entity. It is a symptomatic act, and to ascribe it to a single motivation may be misleading. One of the most outstanding characteristics of the suicidal individual is ambivalence—mixed feelings of love and hatred. Suicidal people want to die, yet they want to be saved. Many have rescue fantasies, and many have made conscious or unconscious plans for their rescue.

Usually, an element of hostility is present in the patient's make-up. This is directed consciously or unconsciously toward a significant person in the suicidal individual's life. Because the patient's controls and his conscience do not permit him to express his aggression toward its true object, he turns it inwardly and expresses it as a depression, with subsequent murderous ideas directed toward himself. Some psychiatrists[2, 10] think that every potential victim of suicide shows strong unconscious hostility, combined with an unusual incapacity to love others. Others stress the immortality aspect, theorizing that the individual kills himself in the belief that he thus can achieve immortality and consequent omnipotence.[5] Introjected guilt feelings with attending depression are often regarded as the ultimate explanation for suicidal motivation.[1] Menninger[3] has pointed out that a self-directed aggression often is evident, with a history of multiple operations or accident proneness that represents an unconscious wish to be hurt or killed. That theory involves the so-called death instinct, which remains a nebulous concept in psychoanalytic circles.

Immature thinking, seen especially in children, is sometimes noted. Such an individual believes that by doing away with the "bad me," he can prepare either to make a new beginning or to join loved ones in a classic Romeo-and-Juliet fashion.[2] It seems that the victim is trying to find someone who really cares. Feelings of despair, loss of self-esteem, and a real or imagined loss of a love object can often be fitted into the various theories.[1]

STATISTICS ON SUICIDE

The true incidence of suicide is difficult to discover. According to VITAL STATISTICS OF THE UNITED STATES, 20,207 successful suicides were reported in this country for 1962.[9] The actual number was much higher, since many suicides probably were reported as natural or accidental deaths. In 19 states, suicide is listed as one of the 10 most frequent causes of death. In the nation, it is the eighth most frequent cause of death among Caucasian males. In Iowa, for 1962, there were 334 reported suicides—somewhat more than half the number of deaths from motor-vehicle accidents (658), and eight times the number of reported homicides (40).[9]

As the result of various factors, the suicide rate seems to be increasing slowly. At the present time, there is at least one suicidal attempt each minute in the United States, and there are between 60 and 70 successful suicides each day. The magnitude of the problem is obvious, and few physicians have been untouched by suicide among their relatives, friends, acquaintances or patients.

Much of our current knowledge of suicide comes from a study made at the Suicide Prevention Center in Los Angeles.[8] That institution has been in operation for about 15 years, and has served both clinical and educational functions. Some of the major conclusions from the study have been the following: (1) Seventy-five per cent of the victims of successful suicides had previous histories of threatened or attempted suicides. Therefore, threats or gestures must be taken as danger signals. (2) Suicidal intent is difficult to predict on the basis of history alone. A broken home, a suicide in the family, recent losses and other factors are important, but each patient must be evaluated individually. (3) Of those who committed suicide after leaving a hospital, half did so within 90 days. Therefore, it is important to be most cautious with people who have been suicidal but seem to be improving.[4] Psychologic tests are helpful in the evaluation of suicidal threats. Test results showed that the seriously suicidal patients were more aggressive, guilt ridden, irritable and agitated. (4) Genuine suicidal notes revealed more blame, guilt, tension, hatred, vengeance and self-blame than did notes from patients who weren't really intent on self-destruction. Interestingly, in the Los Angeles study, 35 per cent of the males and 39 per cent of the females who committed suicide had left notes.[8]

More females than males attempt suicide, but three times as many males actually commit suicide.[9] This ratio holds especially true for older people. Attempts at suicide are more prevalent among people in their twenties and thirties, but actual suicides are more frequent among older people. In general, then, the older the person, the more likely it is that suicidal behavior will have lethal consequences.

Statistics have failed to reveal that people belonging to particular occupational groups have a special tendency toward suicide. There are somewhat more attempts and successful suicides among unmarried people, either single or widowed, than among those who are married. Various studies have failed to give exact data with respect to seasonal or diurnal variations. Recent studies in Houston[6, 7] have failed to reveal differences based on various weather factors or lunar cycles.

There are rather marked differences in the methods used by the sexes. Males tend to use

devices by which death can be reached quickly, whereas women use more ubiquitous devices such as drugs. It seems that men prefer firearms, hanging, carbon-monoxide poisoning and barbiturates, in that order of descending frequency.[9] Women use barbiturates or other drugs most frequently in their successful attempts. In unsuccessful attempts, barbiturates rank first with both sexes, and lacerated wrists rank second.

Certain differences exist with regard to religious affiliation, but individual differences are doubtless more important, and certainly no religion affords certain protection. It seems that in the United States the rate for Jews is lowest, followed by Catholics and Protestants. There are distinct cultural and national differences both in incidence of and attitudes toward suicide. The high incidences of suicide and parent-child double suicide in Japan has been the subject of a recent paper by Ohara.[4]

Fifty per cent of suicides probably are preventable, and as many as 90 per cent of those who seek professional help can be saved. It is noteworthy that 60 per cent of the people who commit suicide have been seen by a physician in the previous six months, and most of these patients have in some way communicated their suicidal intent. Sometimes they feel that there is no way out of their situation, and their communication may not be explicit. Their sole intention is to end it all, and they frequently succeed. However, many phrase their messages in various subtle ways, and hope for a reply. They make conscious or unconscious pleas for help. People with labile personalities are most unpredictable, and the physician obviously must rely on his subjective evaluation of the factors that are contributing to the patient's suicidal drive, and of the factors that are presenting inhibitions.

CHARACTERISTICS OF SUICIDAL PATIENTS

Suicidal drives sometimes are obvious, but more often their detection is an extremely difficult matter. There are certain guides that one can follow in evaluating such drives and in assessing suicidal motivation. About three-fourths of those who commit suicide have had histories of threatened or attempted suicide, and such threats or gestures must be taken as danger signals. Suicidal ideation can occur in all age groups, but when expressed by elderly men it should evoke more concern than when it is voiced by young women. The danger of serious suicidal attempts seems to increase much more with age in males than in females. There is rarely a non-lethal suicide attempt in a male over 50 years old.

The mood of the patient is of the utmost importance. As previously noted, depression remains the most frequent cause of suicidal ideation. On many occasions the depression is covert, and may present as hypochondriasis or as functional symptoms. Diminished psychomotor activity may be associated with the depression. In an agitated depression, there is an increased amount of anxiety. Sometimes treatment with tranquilizers causes the anxiety to subside, but leaves the patient with the depression and with increased suicidal ideas.

There are a few important points that the physician must bear in mind when he assesses a depression. Insomnia is often an ominous sign, especially if the patient is preoccupied and unable to sleep during the early morning hours. Anorexia and loss of weight often are symptoms of depression. Hypochondriasis, recurring guilt, increased hostility and rage, nightmares or dreams of futility, and feelings of hopelessness or impending death—all of these are associated with a depressive affect.

Organic brain syndromes often are overlooked as causes of suicidal ideas. Such a syndrome is especially important in an obsessive-compulsive person who has been limited because of an early organic brain disease. Patients with cerebrovascular insufficiency seem to dread a stroke or possible recurrences of the brain disease, and may present suicidal ideas. Ill health and a recent diagnosis of incurable disease often have been mentioned as a frequent cause of suicide. However, in my opinion, situations like this last one have been overemphasized.

MANAGEMENT OF THE SUICIDAL PATIENT

Rapid assessment of a possible suicide is imperative. Requests for such an assessment may come from various sources—the patient, his relatives, friends or minister, or other interested people or agencies. Briefly, there are three steps in such an emergency evaluation: (1) Obtain the necessary information. (2) Form an opinion based on that information. (3) Recommend appropriate action.

The physician need not fear putting the idea of suicide into the thoughts of the patient by asking him whether or not he has suicidal intentions. He should be tactful in questioning the patient about suicide, however, and should make it evident that by discussing suicide he isn't giving his implied consent. In evaluating suicidal drive, the physician must consider the ability of the patient to handle the stresses of life. An estimate of the amount of pride and pleasure the patient takes in the vocational, social and sexual aspects of his life is important. The relevant data for an evaluation include such factors as age, sex, signs of depression, ill health and methods of communicating suicidal ideas. Recognition of the onset of self-destructive behavior is essential. In general, the more acute and precipitous is the onset of such ideas, the less likely is the actuality of suicide. But paradoxically, the more acute and precipitous the onset, the greater is the need for active intervention! Previous attempts or threats definitely increase the risk. A recent personality change, especially if it

is associated with organic brain disease, may be an ominous sign.

It is necessary to assess the method of possible self-injury. If the patient has formed some definite ideas as regards method, time and place, he should be taken seriously. If he possesses a loaded gun or a supply of barbiturates, or if he has ideas of jumping from a high building, the physician's concern should immediately increase.

The recent loss of a loved one often is an important factor. Suicidal ideas in such cases are often mixed with the wish to die in order to be reunited with the loved one. If the loss is final, as through death, the attempt may be more serious, especially in dependent, middle-aged widows, who also may be depressed. Suicidal ideas may be especially significant in exaggerated or prolonged grief reactions. The medical history of the patient also is significant. If there has been a recent history of depression, incurable malignancy, loss of weight or other biologic components of depression, the physician should be especially concerned.

During an interview with a potentially suicidal patient, it is important for the doctor to assess the quality of the patient's interpersonal relationships. The points for deliberation might include his closeness to his spouse, relatives and acquaintances. His financial resources sometimes may be a factor, especially in a hard-driving businessman. More important, however, is the "emotional bankruptcy" in a patient who is in his forties or fifties and who has unstable personal relationships, is an alcoholic, and manifests impulsivity and hostile dependency.

A previous mental illness in the patient is cause for concern, especially if it has been a manic-depressive psychosis, a severe depression, alcoholism or organic brain disease.

Formulations must be based on the information as it is communicated. The reliability of the data sometimes is difficult to quantitate. The more seriously involved have feelings of hopelessness and helplessness associated with agitation, and these people merit serious concern. In less seriously endangered people, the predominant feeling is one of frustration, anger or rage, especially related to specific events. Some physicians are overly concerned about the patient's possible suicide, perhaps because of their previous bad experiences with suicidal patients. Other physicians are inclined to deny the possibility that in spite of treatment their patient could commit suicide.

Once the physician formulates an opinion based on the information he has obtained, he usually can recommend appropriate action without difficulty. If he has any doubt, hospital care is best. The outpatient management of suicidal patients is hazardous, and even expert psychiatrists often are fooled in selecting this type of management.

Obviously, prevention is the only treatment for suicide. But in order to prevent it, the doctor must understand the problem and recognize presuicidal signs.

SUMMARY

The problem of suicide is indeed a continuing one. However, knowledge that presuicidal patients usually communicate their "cry for help" may alert the physician so that he can take preventive action.

It isn't always easy to recognize such a patient. Increased awareness of depression and its symptoms, and of the various forms that suicidal communication can take, offers the best chance at helping these desperate people.

Overcoming popular prejudice against psychiatric care, and ridding people of the notion that suicidal inclinations in themselves or their relatives are disgraceful and unmentionable—these offer the best chance at improving the current management of this difficult problem.

REFERENCES

1. Farberow, N. L. and Shneidman, E. S., eds.: The Cry for Help. New York, McGraw-Hill Book Company, Inc., 1961, 398 pp.
2. Jackson, D. D.: "Theories of Suicide": In Shneidman, E. S. and Farberow, N. L., eds. Clues to Suicide. New York, McGraw-Hill Book Company, Inc., 1957, pp. 11-21.
3. Menninger, K. A.: Man Against Himself. New York, Harcourt, Brace and Company, 1938, 485 pp.
4. Ohara, Kenshiro: Characteristics of suicides in Japan, especially of parent-child double suicide. (Abstr.) Am. J. Psychiat., **120**:382-385, (Oct.) 1963.
5. Palmer, D. M.: Factors in suicidal attempts, review of 25 consecutive cases. J. Nerv. & Ment. Dis., **93**:421-442, (Apr.) 1941.
6. Pokorny, A. D.: Moon phases, suicide, and homicide. Am. J. Psychiat., **121**:66-67, (July) 1964.
7. Pokorny, A. D., Davis, F. and Harberson, W.: Suicide, suicide attempts, and weather. Am. J. Psychiat., **120**:377-381, (Oct.) 1963.
8. Shneidman, E. S. and Farberow, N. L., eds.: Clues to Suicide. New York, McGraw-Hill Book Company, Inc., 1957, 227 pp.
9. U. S. Public Health Service: Vital Statistics of the United States, 1962. Washington, D. C., U. S. Department of Health, Education and Welfare, 1964, Vol. 2—Mortality, pt. A, pp. 1-15, 1-21, and 1-72.
10. Zilboorg, Gregory: Differential diagnostic types of suicide. Arch. Neurol. & Psychiat., **35**:270-291, (Feb.) 1936.

Health-Occupations Education Program

The program in health-occupations education is being expanded at the U. of I. under Dr. Robert C. Hardin, vice-president for medical services. Originally in the College of Nursing, the program fosters such undertakings by community colleges and area vocational-technical schools. The director is Miss Elizabeth E. Kerr, assistant professor of nursing and state consultant for health-occupations education, Division of Vocational Education, Iowa State Department of Public Instruction.

Since 1959, 15 practical-nurse programs have been established, with Miss Kerr's help, in Ames, Burlington, Centerville, Clarinda, Clinton, Davenport, Des Moines, Estherville, Fort Dodge, Iowa City, Mason City, Ottumwa, Sioux City and Waterloo. It is hoped that at least eight more can be set up this year. In addition there is a need for courses to train additional medical and dental assistants and medical-laboratory assistants.

Editorials

CIGARETTE SMOKING

It is rather generally recognized that the Middlewest—more specifically Iowa—is the sanest and most sensible part of the country. It is the only area where pure English, without regional accent, is spoken. It is the only area that has evolved a happy balance between agriculture and industry. It is the only area that votes Republican most of the time, and yet votes Democratic just often enough to keep things moving. It is the only area that properly understands that poetry and the fine arts, excellence in physics and the sciences, and a Rose Bowl football team all go together. It is the only area that combines—even tolerates with a measure of good humor—the extremes of miserable winters and summers with delightful springs and falls. And last but not least, it is the only area where it is rather generally recognized that the Middlewest—more specifically Iowa—is the sanest and most sensible part of the country.

Because of our section's self-evident attributes, it is no more than right for a candid appraisal of the status of the cigarette smoking problem to be expressed here, in Iowa, at this time. We can all stand a summing-up to clear the air. Here are the facts:

Statistics prove that there is a causal relationship between cigarette smoking and cancer of the lung.

One of the most outstanding biostatisticians in the world denies that such a causal relationship has been established.

Everyone agrees that education of teen-agers about the dangers of cigarette smoking will eliminate the problem in the future.

Anyone with any sense knows that you can't impress teen-agers by saying that smoking, or anything else, will terminate their lives at age 55 or 60. Those ages are centuries away.

Labelling cigarette packages with modest health-hazard warnings will alert the smoker to his danger.

You couldn't effectively scare cigarette smokers even with the melancholy skull and crossbones.

There is a causal or etiologic relationship between cigarettes and lung cancer.

A virus, not smoke, is probably the etiologic factor in cancer.

It is the responsibility of government to protect the public from health hazards.

It is the responsibility of government to protect the economy of important agricultural segments of of our country, one of which consists of the tobacco-producing states.

Cigarette smoking is wrong—perhaps to some extent sinful.

Franklin Roosevelt, Wendell Willkie, Pope John XXIII, Jacqueline Kennedy, Dwight Eisenhower, and Lyndon Johnson are all reported to have been, or to be, cigarette smokers.

Whatever the pros and cons, no parent wants his children to smoke.

Whatever the pros and cons, teen-agers traditionally discount parental advice.

It's quite a problem.

The air is still a bit smokey, even in Iowa.

—Daniel F. Crowley, M.D.

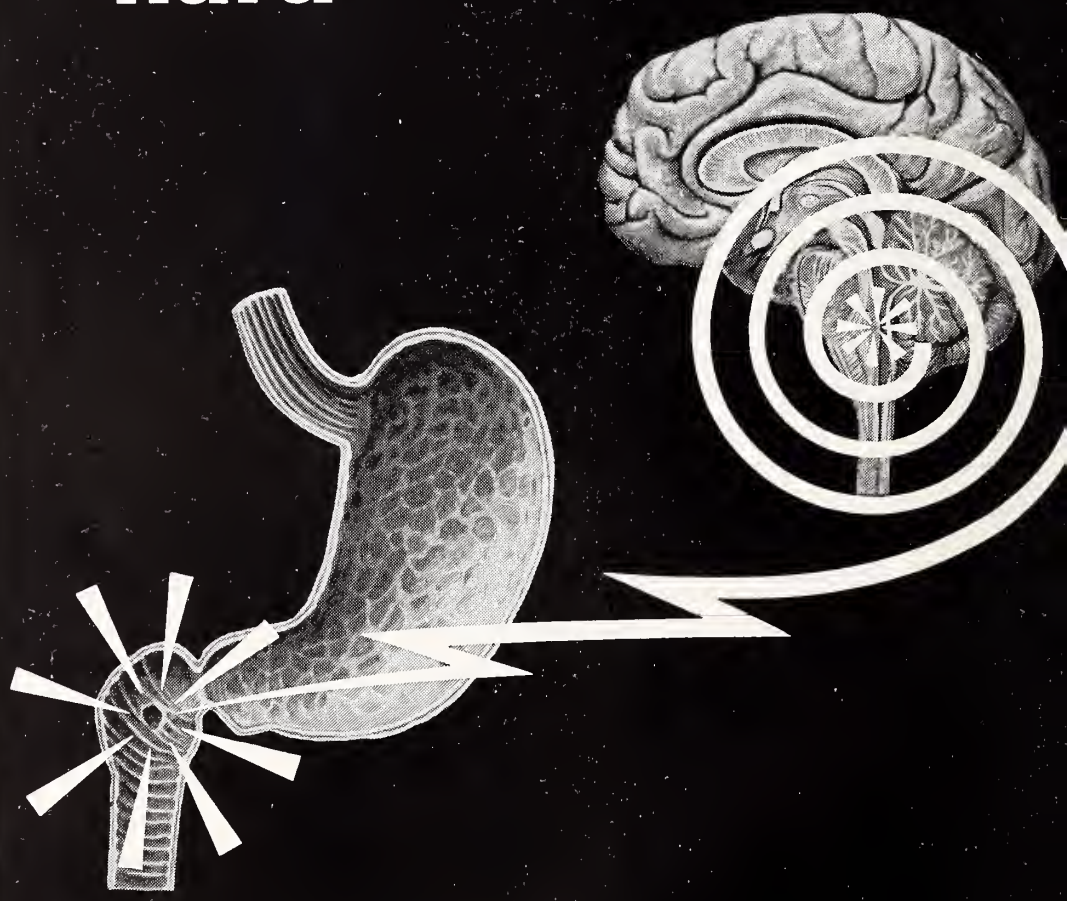
AN ALTERNATIVE TECHNIC FOR FINDING THE CORONARY-PRONE

In a discussion of the Framingham study, in the August issue of the journal, it was pointed out that the serum lipids play an important part in identifying people who are highly susceptible to coronary heart disease. However, the Framingham group emphasized that the degree of concern which is justified by an elevated serum cholesterol depends upon the presence or absence of several associated factors including hypertension, overweight, cigarette smoking, electrocardiographic changes and lowered vital capacity. Their study had demonstrated that an elevated cholesterol level became progressively more ominous as the associated risk factors increased in number. Thus they have suggested that through the use of ordinary procedures, the physician can identify the various risk factors, recognize the coronary-prone individuals and estimate their degrees of risk. The hope is entertained that by finding coronary-prone patients before the onset of overt disease, doctors can initiate effective preventive measures and thus reduce the morbidity and mortality of this serious condition.

Another approach to the same problem was presented recently in Colorado Springs by Dr. Meyer Friedman, of San Francisco, and summarized in an issue of the American Life Convention News Letter. According to Dr. Friedman, coronary-prone individuals exhibit a set of characteristics which he has named "Behavior Pattern A." It includes the following:

1. An enhanced sense of time urgency.
2. Extraordinary competitive desire.
3. A marked tendency to accelerate the tempo of most actions.

when stress strikes hard



PRO-BANTHĪNE® *with* DARTAL®

Each tablet contains: propantheline bromide (15 mg.) and thiopropazate dihydrochloride (5 mg.)

controls autonomic imbalance

Peptic Ulcer • Pylorospasm
Irritable Colon • Functional Gastrointestinal Disorders

Firm control of both the psychic and visceral disturbances is indicated when emotional stress adversely influences gastrointestinal disorders. Pro-Banthīne with Dartal has demonstrated its ability to provide such control.

Pro-Banthīne, as expected, reliably moderates excesses of gastric secretion and gastrointestinal motility.

Dartal, a dependable, well-tolerated tranquilizer, calms the emotional turbulence that aggravates enteric disturbances.

Together, Pro-Banthīne with Dartal offers twofold therapeutic access to a twofold clinical problem.

Urinary hesitancy, xerostomia, mydriasis and, theoretically, a curare-like action may occur with Pro-Banthīne (propantheline bromide) and it is contraindicated in the presence of glaucoma or severe cardiac disease.

With Dartal (thiopropazate dihydrochloride) extrapyramidal and parasympatholytic symptoms have been reported and, rarely, leukopenia, erythematous skin reaction and allergic purpura. Do not administer to patients under the influence of alcohol, barbiturates or narcotics and use cautiously with sedatives, in epileptic or depressed patients or in those with liver damage. Reactions typical of phenothiazines may occur.

Dosage: One tablet three times a day.

SEARLE P. O. BOX 5110, CHICAGO ILLINOIS 60680

Research in the Service of Medicine

Editorials continued...

4. A strong tendency to become involved in many activities.

He points out that everyone may exhibit some or all of these qualities from time to time. However, the "Pattern-A" individual differs from the common run of men in a quantitative way. His competitive drive is exceptional, he is always in a hurry and his involvements in diverse projects have made his life unduly complicated. "Pattern B," according to Dr. Friedman, is the converse of "Pattern A."

He emphasizes that an individual possessing the qualities just described may not be recognizable unless a second part of the syndrome is fully appreciated—a challenging environment. "Pattern A" does not become apparent until the susceptible individual is confronted with a certain type of milieu. Thus the prerequisites are (1) certain intrinsic characteristics and (2) a provocative milieu that evokes or provokes those characteristics.

Dr. Friedman asserts that the only value in recognizing "Pattern A" is in its possible relation to coronary-artery disease, but from the studies at the Harold Brunn Institute, with which he is associated, it appears that such a relationship does indeed exist. The evidence given to substantiate this relationship is as follows:

1. When a community is studied and its subjects with "Pattern A" are separated from those exhibiting the converse pattern, it is found that there are approximately seven times as many cases of coronary disease in the "Pattern-A" group. Inasmuch as individuals in the two groups are the same as regards age, weight, diet and exercise patterns, it is deduced that their only difference capable of explaining the variations found in coronary-artery morbidity must relate to their contrasting behavior patterns.

2. The San Francisco investigators have observed that over 90 per cent of their patients who were already ill with coronary-artery disease possessed this same "Pattern A." Since interrogation has revealed that most of them had this pattern for many years before the onset of their first cardiac symptoms, it seems obvious that the pattern antedated rather than resulted from the disease.

3. Convincing evidence resulting from the study by the Brunn Institute is the fact that almost three times as many cases of cardiac disease are occurring in a group of men who were free of disease and classified as "Pattern A" in 1960, as are occurring in a group of men who also were free of disease in the same year but were classified as "Pattern B."

Biochemical studies of many healthy individuals with "Behavior Pattern A" also were found to show certain findings that had been found in patients with coronary artery disease. Whether in subjects chronically exhibiting "Pattern A" or in accountants temporarily exposed to a provocative milieu, it was found that the blood-cholesterol level can be markedly elevated in people having this behavior pattern. These subjects also have elevated serum triglyceride levels. They are said to excrete more epinephrine and to exhibit a faster clotting time than do subjects with the converse behavior pattern.

Just what factors cause an increased susceptibility to coronary-artery disease in "Pattern A" people is still undetermined, but a relationship between personality pattern and clinical coronary-artery disease is difficult to deny. Dr. Friedman asserts that direct evidence of participation by the central nervous system in the control of blood cholesterol was observed in a laboratory study in which chronic stimulation of the hypothalamus in rabbits was carried out. From their experience, the California investigators believe that the behavior pattern described has a much greater potential for elevating the blood cholesterol than has any manipulation of the diet. When the intensity of the behavior pattern is at its peak, a rise in cholesterol takes place irrespective of any dietary regimen.

POSTPARTUM TUB BATHS

Obstetricians at the Charles T. Miller Hospital, in St. Paul, and at the Mayo Clinic, in Rochester, Minnesota, are enthusiastic about the merits of tub baths for their patients, beginning just a day or two postpartum. By that means they have found it possible virtually to dispense with external douches, flushings, bed baths and perineal lights, and in consequence to save a great deal of time for their nurses.

Their report* is based on experience with over 2,000 patients in St. Paul and 10,000 in Rochester. At the former, patients were invited to begin tub baths on the first postpartum day; at the latter, they began them no earlier than the third day, initially, but the pattern was subsequently modified and the women delivered recently have been permitted to begin tub baths on their first or second day.

Of the 2,150 St. Paul women, all of whom were given tub baths within 24 hours after delivery, 34 (1.58 per cent) subsequently had fevers of 100.4°F. or higher, possibly related to tub bathing, and 18 (.084 per cent) had fevers considered unrelated to tub bathing. Of the 10,000 delivered at Rochester, most of whom started tub baths no earlier than the second or third postpartum day, 32 (0.32 per cent) had fever possibly related to tub bathing, and 25 (0.25 per cent) had fever that was considered unrelated to that activity.

* Hodgson, J. E., and Smith, R. A.: Postpartum tub baths associated with morbidity. MINNESOTA MED., 48:877-879, (July) 1965.

The authors recite the following as advantages of tub baths postpartum: "Physical comfort obviously was improved with elimination of lochia and perspiration from the perineum. The saponific action of the soap dissolves the dried adherent blood and serum from the perineal skin. Analgesics required for perineal discomfort were greatly reduced.

"It is estimated that each patient requires at least one or two hours of nursing care per day for the usual and accepted perineal routine. The daily bed baths and series of four to six external flushings require a great deal of nursing time. In contrast, tub baths require less than 10 minutes. With this time the nurse or aide can thoroughly clean and prepare the tub for the next patient.

"The effect of warm baths on improvement of bladder function is well known. The application of this principle to postpartum care seems obvious. In the St. Paul study it was noted that the frequency of postpartum catheterization was reduced. Reduction of perineal edema and anal discomfort is also noted in the study."

In reply to the question "Should all obstetrical units be equipped with tub baths?" the authors say "Yes!" A satisfactory ratio, they think, is one tub per six patients. Showers, they point out, are of little use in an obstetrical or gynecological unit. "The anatomy of the female is such that the genitalia cannot be adequately cleansed in a shower."

A PRAYER

Lord, Thou knowest better than I know myself that I am growing older and will someday be old. Keep me from the fatal habit of thinking I must say something on every subject and on every occasion. Release me from craving to straighten out everybody's affairs. Make me thoughtful but not moody; helpful but not bossy. With my vast store of wisdom, it seems a pity not to use it at all . . . but Thou knowest, Lord, that I want a few friends at the end. Keep my mind free from the recital of endless details . . . give me wings to get to the point. Seal my lips on my aches and pains. They are increasing, and love of rehearsing them is becoming sweeter as the years go by. I dare not ask for grace enough to enjoy the tales of others, but help me to endure them with patience. I dare not ask for improved memory but a growing humility and a lessening cocksureness when my memory seems to clash with the memories of others. Teach me the glorious lesson that occasionally I may be mistaken. Keep me reasonably sweet. I do not want to be a saint—some of them are so hard to live with—but a sour old person is one of the crowning works of the devil. Give me the ability to see good things in unexpected places and talents in unexpected people. Give me the grace to tell them so. Amen.—NEW ENGLAND J. MED., **271:744**, Oct. 1, 1964.

FINAL STEPS IN ERADICATING TUBERCULOSIS

From one extremely important point of view the above title is unwarrantedly encouraging. Even with unlimited funds, with case-finding methods which some people are sure to consider totalitarian, and with the best of presently-known technics, it will be impossible to eradicate tuberculosis before the end of this century. Nevertheless, the end can now be planned for.

In the BRITISH MEDICAL JOURNAL for May 22, 1965, Mitchison* has asserted that chemotherapy is providing the final answer. "Before the discovery of antibacterial drugs for the treatment of tuberculosis," he reminds us, "therapeutic measures were mainly aimed at increasing the patient's resistance to the disease. These measures included rest for the patient and for the affected organ, good food, and an absence of emotional strain." Now, he declares, "The host and his immune response have become less important, while the reaction between the tubercle bacillus and the drug has come to dominate the scene."

His statements reflect his complete confidence that chemotherapy can cure all cases of tuberculosis other than those which are already far advanced when they present for treatment, and he is concerned principally about conserving pounds, shillings and pence in combatting the disease in underdeveloped countries such as India. He contends that resistant strains of tubercle bacilli do not constitute insuperable obstacles. His statistics, based on studies at the Tuberculosis Chemotherapy Centre, Madras, indicate that isoniazid alone is certainly insufficient, but that isoniazid and para-amino-salicylic acid effect slow cures in about half of patients with isoniazid-resistant strains, even though PAS is bacteriostatic rather than bactericidal. Triple-drug therapy yielded the best results in the Madras studies, but Mitchison speculates that streptomycin in combination with isoniazid might possibly have been as efficacious as it was in combination with both isoniazid and PAS. In addition, he says, the Madras investigators found that a single 400 mg. dose of isoniazid was more effective than two 200 mg. doses per day, when isoniazid was used alone, and similarly that a twice-weekly large dose of isoniazid plus streptomycin was at least as effective as the standard regimen of isoniazid plus PAS.

After pointing out that tuberculosis is predominantly a disease of poverty and that poor nations cannot always employ the triple-drug treatment that is to be preferred, he says: "For such countries the best policy may be to allocate regimens of varying grades of efficacy according to the type of disease encountered in the patient. In these circumstances assessments of the extent of cavitation

* Mitchison, D. A.: Chemotherapy of tuberculosis: bacteriologist's viewpoint. BRITISH M.J., **1**:1333-1340, (May 22) 1965.

Editorials continued...

in the pretreatment radiographs and the bacterial content of the sputum continue to be of great value. For instance, regimens starting with initial triple-drug therapy could be reserved for patients with considerable cavitation and heavily positive sputum, while double-drug treatment or even treatment with isoniazid alone in a dosage of 400 mg. a day might be used for patients with less severe disease."

"Simple bacteriological methods of smear and culture examination are adequate for assessing the response to treatment," he insists. "The addition of complex sensitivity tests during treatment may only confuse the assessment, because resistant strains are often of the transitional type and are followed by sputum conversion. Although radiography plays a part in the diagnosis of tuberculosis, it is rarely necessary as an adjunct to treatment. Simplification in treatment allows the emphasis to be put where it belongs, on the administration of an effective drug combination for a sufficient length of time and on seeing that it has been taken by the patient. . . .

"Clearly, a need still exists for a new drug that approaches isoniazid in high potency, low toxicity and low cost. The discovery of such a drug would mean that we could stop much of the present use of PAS and streptomycin. Both of these drugs are toxic, are expensive, and have peculiar disadvantages; PAS does not always suppress bacterial growth, while streptomycin has to be given by injection. . . .

"It is the drugs that kill the bacilli and not the patient's immune response. In consequence, measures of treatment other than efficient chemotherapy are largely unnecessary, and the control of treatment should be based on smear and culture examinations of sputum."

Eckmann,** writing for the July, 1965, issue of DISEASES OF THE CHEST, has been similarly optimistic, though he does not foresee that the problem will have been solved earlier than 1999. He refers to the period from 1900 to 1930 as the "hygienic period." In those years, there was an increase in public knowledge about the disease, a growing familiarity with its mode of transmission, and the institution of hygienic practices in its management —especially sanatorium treatment, rest, nutrition and fresh air. Between 1930 and 1960, specific therapy was developed. The coming 35 years, he hopes will be the period of prophylaxis.

"Sterilization of the bacillary reservoir in our population can occur in only one way," Eckmann insists. "There must be a pinpoint followup of old cases and all other groups at high risk, with a program to monitor them for signs of active disease and to suppress such disease appropriately with therapy. To carry out the principles of prevention and prophylaxis, first we must protect the uninfected from infection, and second we must prevent the infected from breakdown." These tasks can be accomplished only by comprehensive public health programs. An accurate serologic test, an effective vaccine and a rapid-acting bactericidal antibiotic would be of inestimable value to us, and it is to be hoped that they will be developed, but even with the tools we now possess, he regards the task as far from impossible. For purposes of case finding, he advocates universal tuberculin testing for (1) school children, (2) young adults, as a premarital requirement, and (3) elderly persons as a prerequisite to the receiving of Social Security benefits.

Since between 30,000,000 and 50,000,000 Americans—no fewer than one in four persons in this country and far higher proportions abroad—harbor tubercle bacilli, the task of eradicating tuberculosis is gargantuan. But it is no longer impossible, and we must start working at it immediately.

** Eckmann, B. H.: Next generation in tuberculosis. DISEASES OF THE CHEST, 48:14-19, (July) 1965.

Letter to the Editor

Sir:

The Iowa Medical Society's Resolution No. 50, on Vexatious Litigation, introduced at Atlantic City in 1963, was rejected by the AMA House of Delegates at the request of the physician members of the AMA—American Bar Association Liaison Committee.

The main trouble was that most of the AMA delegates failed to understand the resolution. One could not get the necessary information to them because the medical publications, like the AMA NEWS and most state medical journals, refused to publish any article favorable to Resolution 50. I blame this mostly onto the attorneys working for the medical profession.

The legal profession hovers over the medical publications and the medical-legal liaison committees like a bird over its young. No matter how beneficial a resolution might be for the medical profession and the general public, if our hired attorneys think that it might affect the legal profession adversely, they oppose it. The AMA medical-legal committee also studied our resolution. This committee's chairman was a judge. Naturally, their report was unfavorable.

Another great handicap in getting our resolution adopted was that some of our Iowa AMA delegates did not understand it, and apparently opposed it.

I attended four AMA conventions, beginning

with the one at Atlantic City where our Iowa Medical Society Resolution was introduced. I contacted all the members of the Board of Trustees and the majority of them were in favor of our resolution, but a powerful minority of its members who were also represented on the AMA-ABA Liaison Committee opposed it, and had their way.

When Mr. Stetler, former general counsel of the AMA, has stated that the majority of malpractice suits are without merit, how can we sit idly by and let the legal fraternity clobber us over our heads?

At the AMA meeting at Atlantic City in 1963, Resolution 50 should have been referred to the AMA Legislative Committee for study, where it could have been considered in an unbiased manner. Then, that Committee could have referred it to the American Bar Association for a report.

A recent former president of the AMA (not Dr. Ward) told me at the AMA convention in Miami that our Iowa resolution had done a lot of good already. The benefits would have been much greater if it had been adopted.

PETER VAN ZANTE, M.D.

Pella, Iowa
August 1, 1965

Guidelines for School Health

One sure way to help preserve a teacher's health consists of periodic health examinations, says a booklet HEALTH OF SCHOOL PERSONNEL which is being distributed by the Joint Committee on Health Problems in Education of the NEA and the AMA. Indeed the health of all school personnel should be checked regularly for the protection of the entire community.

A Midwestern community is cited in which a sixth-grade teacher began teaching in January, and though the school requires routine health examinations, he got none. He was later found to have active tuberculosis. After several months, an investigation disclosed:

1 teacher with active primary TB
1 teacher hospitalized with active pulmonary TB
3 students with active pulmonary TB
16 students with active primary TB who must receive medication for at least one year
66 students who must be checked for TB every year for the rest of their lives
6 adults who must be checked every year for the rest of their lives.

The NEA-AMA booklet is designed to aid in planning health safeguards for the school employee and indirectly for the students. It cites a report by the Connecticut departments of education and health suggesting that policies and procedures for school health examinations be developed by a group which includes teachers, the school medical advisor, the school nurse, the local director of public health and representatives of local physicians.

Copies of the booklet are available for 75¢ each from the Joint Committee on Health Practices in Education, c/o American Medical Association, 535 North Dearborn Street, Chicago 60610.

Health Hints for Football Practice

The AMA offers these suggestions to football coaches to prevent players' heat exhaustion and heat stroke:

1. Require a careful medical history and check-up for each participant prior to the beginning of practice.
2. Schedule workouts during cooler morning and early-evening hours in hot weather.
3. Acclimate athletes to hot-weather activity by carefully graduated practice schedules.
4. Provide rest periods of 15 to 30 minutes during workouts of an hour or more during hot weather.
5. Supply white clothing (to reflect heat) which is loose and comfortable (to permit heat to escape) and capable of absorbing perspiration.
6. Furnish extra salt and drinking water. (The old idea that an athlete should be denied water during workouts doesn't stand up.)
7. Watch athletes carefully for signs of trouble, such as inattention, lethargy, awkardness or unusual fatigue. Symptoms of salt-and-water depletion may include headache, nausea, and a weak and rapid pulse.
8. Remember that temperature and humidity, not the sun, are the important factors to consider. Heat exhaustion and heat stroke can occur in the shade.
9. Know what to do in case of an emergency, including immediate first aid and prearranged procedures for obtaining medical care.

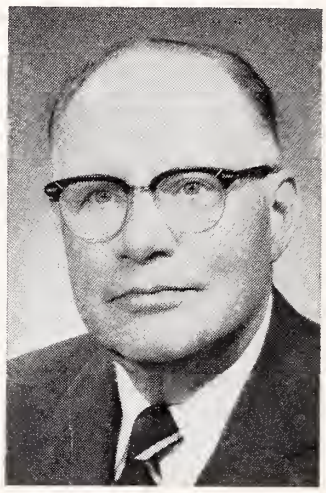
COUNTY SOCIETY OFFICERS!

Please Mark Your Calendar:

IMS Fall Conference for County Medical Society Officers and Other Representatives

Hotel Fort Des Moines, Des Moines
Sunday, September 26

President's Page



Summer and vacation time are nearing an end. The fall season calls for reactivation of our county medical societies and of our scientific meetings. There is no question that all scientific sessions will be well attended. To keep abreast with the advancement of medicine is second nature to us and is a part of the physician's way of life.

But what about our economic problems? To solve these problems we must start at the local level and face frankly what our errors have been in the past. Where did we go wrong? We must face these first, and then ask why the people's representatives turned against us. Once these questions have been answered fairly and frankly, we can then plot the future.

Failure to act as community leaders has been one of our shortcomings. Likewise, we are at fault for our placid attitude that "it can't happen to us." Our unwillingness to give part of our time to local politics—indeed in many cases, our failure to vote—gave our opponents the very advantage that they needed.

May I again urge you to participate actively in local elections, for it is from local offices that national and state officers rise. Use your influence, time, and money to see that advocates of free enterprise are elected.

If after your deliberations you feel that you don't have the answers, please remember that your Iowa Medical Society has an open-door policy to its members. Your officers and staff may not have the answers, but I assure you that they will make every effort to obtain the requisite information.

We have all had occasions to prescribe bitter potions to our patients. They were bitter to swallow, but the patients improved and survived. There is no question that we have been handed a bitter dictate by the Administration. But let's not be like the spoiled child who screams and pouts. The task will be long and hard, for we must start from the bottom and work toward the status we once possessed. To accomplish this we have the same weapon that our adversaries used—politics—if we will merely stop and take advantage of the available techniques.

At this time I should like to suggest that all of you who possibly can arrange it should attend the Fall Conference on September 26. By so doing you will carry home the basis of your work for the future.

Frank Oberg

President

Coming Meetings

IN STATE

Sept. 15-16 **Postgraduate Course on Pediatrics,** University of Iowa College of Medicine, Medical Amphitheater, University Hospitals, Iowa City.

Sept. 16-17 **Interprofessional Seminar on Diseases Common to Animals and Man,** University of Iowa College of Medicine, Medical Amphitheater, University Hospitals, Iowa City.

Sept. 24-25 **Postgraduate Course on Problems in Urology,** University of Iowa College of Medicine, Medical Amphitheater, University Hospitals, Iowa City.

Sept. 26 **IMS Fall Conference for County Medical Society Officers and Other Representatives,** Hotel Fort Des Moines, Des Moines.

Sept. 27-28 **Seventeenth Annual Meeting and Scientific Assembly of the Iowa Chapter of the AAGP,** Hotel Savery, Des Moines.

Oct. 1 **Otolaryngology for the General Practitioner,** University of Iowa College of Medicine, Room E-331, Medical Amphitheater, University Hospitals, Iowa City.

Oct. 2-3 **Postgraduate Course on Radiology,** University of Iowa College of Medicine, University Hospitals, Iowa City.

Oct. 13-15 **52nd Annual Conference,** Mississippi Valley Conference on Tuberculosis and Mississippi Valley Thoracic Society, Hotel Savery, Des Moines.

Oct. 15-16 **Postgraduate Course in Orthopedics,** University of Iowa College of Medicine, Room E-331, Medical Amphitheater, University Hospitals, Iowa City.

CONTINENTAL U. S.

Sept. 8 **National Conference on Community Health Services,** San Francisco, California.

Sept. 14-17 **18th Annual Meeting of the American Association of Blood Banks,** Americana Hotel, Bal Harbour, Florida.

Sept. 15-17 **Three Days in Cardiology,** Lowry Hotel, St. Paul, Minnesota. (Sponsor: Minnesota Heart Association.)

Sept. 15-18 **National Conference on Community Health Services, Forum for Mid-West States,** Chicago, Illinois.

Sept. 19 **Nineteenth Quarterly Postgraduate Seminar for Family Physicians,** Neurological Hospital, 2625 West Paseo, Kansas City, Missouri.

Sept. 19-22 **95th Annual Session of the Colorado Medical Society,** Broadmoor Hotel, Colorado Springs, Colo.

Sept. 19-24 **Centennial Session of Michigan State Medical Society,** Sheraton Cadillac Hotel, Detroit, Michigan.

Sept. 20-24 **Basic Mechanisms in Internal Medicine,** The American College of Physicians, Medical College of Virginia, Richmond, Va.

Sept. 20-Oct. 2 **Postgraduate Course in Laryngology and Bronchoesophagology,** University of Illinois College of Medicine, Medical Center, Chicago.

Sept. 21-23 **Genesis, Epigenesis, Modern Physic and the Child,** Dept. of Pediatrics, University of Minnesota Hospitals, Minneapolis.

Sept. 22-25 **National Conference on Community Health Services, Forum for Southern States,** Atlanta, Georgia.

Sept. 23-25 **Tenth National Conference on Physicians & Schools,** Sheraton-Chicago Hotel, Chicago.

Sept. 24-26 **International College Surgeons Annual Clinical Congress,** Concord Hotel, Kiamesha Lake, New York.

Sept. 29-Oct. 2 **Initial Emergency Care and Transportation of the Sick and Injured,** Memorial Coliseum, Portland, Oregon. (Sponsor: American Academy of Orthopaedic Surgeons.)

Sept. 29-Oct. 2 **National Conference on Community Health Service, Forum for Northeastern States,** Philadelphia, Pennsylvania.

Sept. 30-Oct. 2 **American College of Obstetricians and Gynecologists District I & II Meeting,** The Americana Hotel, New York City.

Oct. 2-3 **National Congress on Medical Ethics and Professionalism,** Drake Hotel, Chicago, Illinois.

Oct. 4-6 **43rd Annual Fall Clinical Conference,** Hotel Muehlebach, Kansas City, Missouri.

Oct. 7-9 **Fall Meeting of The American College of Physicians,** Deauville Hotel, Miami Beach, Fla.

Oct. 10 **Annual Scientific Meeting, American College of Nutrition,** Americana Hotel, New York City, New York.

Oct. 11-13 **Annual Meeting, Academy of Psychosomatic Medicine,** Sherman House, Chicago, Illinois.

Oct. 11-13 **Hospital Medical Staff Conference,** University of Colorado School of Medicine, YMCA Conference Center, Estes Park, Colo.

Oct. 11-14 **Second Postgraduate Course on Fractures and Other Injuries,** Committee on Injuries of the American Academy of Orthopaedic Surgeons, Riviera Motel, Atlanta, Ga.

Oct. 11-15 **Morphologic Biochemical and Clinical Aspects of Hepatic Disease,** The American College of Physicians, Chicago Medical School, Mount Sinai Hospital, Chicago, Illinois.

Oct. 12-14 **Annual Congress on Occupational Health,** Murat Temple, Indianapolis, Ind.

Oct. 13-14 **The Clinical Application of Current Concepts in Renal Pathophysiology,** University of Wisconsin, Madison, Wisconsin.

Oct. 14 **Symposium on Suicide,** George Washington University School of Medicine, Lisner Auditorium, Washington, D. C.

Oct. 14-16 **American Association for Surgery of Trauma,** Warwick Hotel, Philadelphia, Pa.

Oct. 14-16 **American Academy of Neurological Surgery,** Terrace Hilton Hotel, Cincinnati, Ohio.

Oct. 14-16 **Conference on Medical Education in the Hospital,** University of Colorado School of Medicine, YMCA Conference Center, Estes Park, Colo.

Oct. 14-16 **American College of Obstetricians and Gynecologists District III Meeting,** Pittsburgh Hilton, Pittsburgh, Pa.

Oct. 18-21 **18th Annual Postgraduate Seminar,** Illinois Academy of General Practice, Sherman Hotel, Chicago, Illinois.

Oct. 18-21 **51st Annual Clinical Congress of the American College of Surgeons,** Shelburne Hotel—headquarters, Convention Hall—Scientific Sessions, Atlantic City, New Jersey.

Oct. 18-22 **American Association of Public Health Physicians,** Conrad Hilton Hotel, Chicago, Illinois.

Oct. 18-22 **The Rheumatic Diseases: Pathology, Diagnosis and Treatment,** The American College of Physicians, Robert B. Brigham Hospital, Boston, Mass.

Oct. 18-22 **Clinical Application of Cardiopulmonary Physiology,** American College of Chest Physicians, Knickerbocker Hotel, Chicago, Illinois.

Oct. 23-28 **34th Annual Meeting,** American Academy of Pediatrics, Palmer House, Chicago, Illinois.

Oct. 22-23 **American Association of Automotive Medicine,** Mayo Clinic, Rochester, Minnesota.

Oct. 24-27 **American College of Obstetricians and Gynecologists, District VIII Meeting,** Sahara Hotel, Las Vegas, Nev.

Oct. 25 **Eighth Annual Meeting, American Association of Poison Control Centers,** Palmer House, Chicago, Illinois.

Oct. 25-27 **Molecular Biology: Its Implications for Modern Medicine,** The American College of Physicians, University of Chicago Center for Continuing Education, Chicago, Illinois.

Oct. 25-27	**30th Annual Convention of the American College of Gastroenterology,** Americana Hotel, Bal Harbour, Fla.
Oct. 25-28	**Omaha Mid-West Clinical Society Postgraduate Assembly,** Civic Auditorium, Omaha, Neb.
Oct. 28-30	**American College of Obstetricians and Gynecologists District VI Meeting,** Kahler Hotel, Rochester, Minn.
Oct. 28-31	**American College of Obstetricians and Gynecologists District V Meeting,** Hotel Cleveland, Cleveland, Ohio.
Oct. 30-31	**16th National Conference on Disaster Medical Care,** AMA, Drake Hotel, Chicago, Illinois.
Oct. 30-Nov. 5	**Annual Otolaryngologic Assembly of 1965,** University of Illinois College of Medicine, Chicago, Illinois.

ABROAD

Sept. 5-8	**Federation of Societies for French-Speaking Gynaecologists and Obstetricians Congress,** Lausanne, Switzerland.
Sept. 5-9	**European Academy of Allergology,** Stockholm.
Sept. 5-10	**International League Against Epilepsy**—Quadriennial Meeting, Vienna, Australia.
Sept. 5-10	**Sixth International Congress of Electroencephalography and Clinical Neurophysiology,** Vienna, Austria.
Sept. 5-10	**Eighth International Congress of Neurology,** Vienna, Austria.
Sept. 6-10	**Seventh International Embrylogical Conference,** London.
Sept. 9-11	**Second International Congress on Phlebology,** Wiesbaden.
Sept. 11-12	**Symposium on Brain Edema,** Vienna.
Sept. 15-18	**International Association of Gerontology** (4th Congress of European Clinical Section), San Remo, Italy.
Sept. 16-19	**Seventh International Congress of General Practice,** Salzburg, Austria.
Sept. 19-24	**World Medical Association 19th Annual Assembly,** London.
Sept. 22-28	**Eleventh International Congress of Radiology,** Rome, Italy.
Sept. 28-30	**College of General Practice of Canada,** Prudhomme's Hotel, Vineland, Ontario.
Oct. 5-9	**18th International Tuberculosis Conference,** Munich.
Oct. 5-9	**Fourth International Congress of Infectious Pathology and Parasitology,** Freiburg, Germany.
Oct. 24-30	**Eighth Quadriennial International Congress of Otorhinolaryngology,** Tokyo, Japan.
Nov. 7-13	**Eleventh Triennial International Congress of Pediatrics,** Tokyo, Japan.

Cancer Nursing Conferences

The American Cancer Society, Iowa Division, Inc. will resume its series of cancer nursing conferences early next month. Programs are scheduled at Davenport on Tuesday, October 5; Dubuque on Wednesday, October 6; Spencer on Thursday, October 7; and Red Oak on Friday, October 8.

The speakers will include several Iowa physicians, and the headliner will be Miss Virginia Barckley, nurse consultant for the American Cancer Society.

Similar programs were held last year in Waterloo, Burlington, and Des Moines, following pilot ones at Mason City and Sioux City.

Effects of Loss of a Parent

Loss of a parent sometimes results in juvenile delinquency or school dropout—but it may also stimulate some children to extra achievement.

These are findings in two reports in the current (August) ARCHIVES OF GENERAL PSYCHIATRY.

The author of both reports, Ian Gregory, M.D., Columbus, Ohio, found that of students referred to him for psychiatric consultation at a small midwestern liberal arts college, a higher-than-average percentage had lost a parent from death or divorce. Of these, a much higher than average percentage had parents who were divorced.

At the same college, however, two students who had lost a parent by death were among seven who were graduated with highest honors over a five-year period. The figure is admittedly small, but has some statistical significance, the author says.

"This combination of rare events is unlikely to have occurred by chance, and suggests that factors associated with bereavement may lead some students to strive for exceptional achievement," Dr. Gregory said.

He also surveyed a statewide sample of 11,329 Minnesota ninth-grade school children and found that:

Delinquency in boys was much more frequent than average among boys who had lost their father by separation or divorce.

Delinquency was somewhat more frequent than average among boys who had lost their father by death.

Delinquency in girls was more frequent among those whose parents had been separated or divorced, those who had lost their mother by death, those who were living with father only, and those who were living with neither parent.

Girls who lost their mothers and boys who lost their fathers got into more trouble than children who lost parents of the opposite sex.

High rates of high school dropouts were found among both boys and girls whose parents had been separated or divorced, and those who lost a parent of the same sex by death. Among non-delinquents, however, school dropout is more strongly related to intelligence and socioeconomic status than any other factor.

Iowa Chapter of the AAGP

Seventeenth Annual

SCIENTIFIC ASSEMBLY AND MEETING

Hotel Savery—Des Moines

September 27-28, 1965

THE JOURNAL *Book Shelf*

BOOK REVIEWS

THE HORMONE QUEST, by *Albert Q. Maisel* (New York, Random House, 1965).

It has been a long time since this reviewer has been so interested in completing a book as he was in the reading of the story entitled THE HORMONE QUEST. The story itself is very fascinating, perhaps more so than usual because the reviewer remembers in detail many of the events that are described with a great deal of accuracy in it. The historical background to the developments that have taken place in the last 50 years make this volume a must for all medical men particularly, but it should not be limited to professional men alone. The easy style of the author, his ability to lead in to the story, the excitement of what can be done in the area of chemistry are something to behold.

The author may be accused of being a salesman for certain drug firms that are mentioned, but this reviewer feels that the mention of these firms is a necessary part of the whole story, particularly when one realizes that this whole development and progress was carried out without the benefit of subsidy from government. This is a very pure example of what private enterprise has done to bring medicine in the United States to the pinnacle of respect that it now enjoys. My thanks to the author for a job well done.—*Otto N. Glesne,* M.D.

MODERN TREATMENT Vol. 2, No. 3: TREATMENT OF PANCREATIC DISEASE, ed. by *William A. Knight, Jr.,* M.D. (New York, Hoeber Medical Div., Harper & Row, Publishers, 1965. $16 per year).

Nowadays our ordinary medical journals are largely filled with articles on exotic scientific subjects with a narrow-scope. In a reaction against this trend, the medical tapes, a few medical journals and miscellaneous publications have decided to give the practicing physician a broader, more generalized coverage of medical subjects and a broader, more philosophical viewpoint. One of the newer attempts along this line is now being carried out by the Association of American Medical Book Publishers, under the title of Modern Treatment. This new bi-monthly publication is in a laminated paperback form and costs $16.00 per year, by subscription only.

The present issue, Volume II, number 3, includes Treatment of Pancreatic Disease and special articles on the uses of tranquilizers, antidepressants and stimulants. The symposium on pancreatic disease has seven well-known contributors. Their topics range from acute pancreatitis and recurrent pancreatitis to the surgery of pancreatic disease, and the medical treatment of pancreatic neoplasms. Each article is authoritative, succinct and well outlined, and liberally sprinkled with graphs and tables.

Modern treatment is thus timely and well considered, and it may well be that audio-tapes and paperbacks such as these will be of much more value to the practicing physician than the usual medical journal. They are certainly excellent supplements. They provide the broad, general concepts of disease processes that we so desperately need in this era of rapid medical and pharmacological advance. The expense is a little high, but I think I shall subscribe.—*Daniel A. Glomset,* M.D.

NEW DRUGS, 1965, evaluated by the AMA Council on Drugs (Chicago, American Medical Association, 1965. $5.00).

NEW DRUGS, 1965 edition, may well prove to be the most useful reference volume on the practicing physician's shelf. Designed by the Council on Drugs of the AMA to supplant its former "New and Non-Official Drugs," this volume has organized useful and pertinent information on the majority of new drugs introduced into the United States in the past 10 years into 476 pages of concise, useful and "easy to find" material.

Chapter organization is along therapeutic lines (Antibacterial Agents; Coronary Vasodilators; Antineoplastic Agents, etc.) rather than pharmacologic ones. Each chapter discusses the types of drugs in the particular category, their relationship to one another and their potential side effects. It then presents the individual drugs in monograph form, dealing with their action and usage, adverse reactions, precautions and finally dosage and administration. The proprietary name, year of introduction, manufacturer and the date last evaluated by the Council are included.

Of especial interest to the clinician will be the cross indexing of drugs by *both* proprietary and generic names, thus obviating one of the major problems posed by the usual type of commercial "desk reference."

A word of caution: The drugs listed are *individual* agents, and one will not find listed the single dosage forms of tablets or capsules containing more than *one* ingredient.—*Samuel J. Zoeckler,* M.D.

BOOKS RECEIVED

RADIOLOGIC STUDIES OF THE GRAVID UTERUS, by *Paul A. Bishop,* M.D. (New York, Hoeber Medical Division-Harper & Row, Publishers, Inc., 1965, $14.50).

OBSTETRICS, by *J. P. Greenhill,* M.D., F.A.C.S., F.I.C.S., (Hon.), F.A.C.O.G. (Philadelphia, W. B. Saunders Company, 1965, $20.00).

HAPPINESS DOCTOR, by *Joyce Perrin,* M.D. (New York, Vantage Press, 1965, $2.50).

APPLIED HYPNOSIS AND POSITIVE SUGGESTION, by *George A. Ulett,* B.A., M.S., M.D., Ph.D., and *Donald B. Peterson,* M.D. (St. Louis, The C. V. Mosby Co., 1965, $8.50).

ELECTROCARDIOGRAPHY AND VECTORCARDIOGRAPHY, by *Lawrence E. Lamb*, M.D. (Philadelphia, W. B. Saunders Company, 1965, $17.00).

ANATOMY AND SURGICAL TECHNIQUE OF GROIN DISSECTION, by *John S. Spratt, Jr.*, M.D., F.A.C.S., *William Shieber*, M.D., F.A.C.S., and *Burl Mayes Dillard*, M.D. (St. Louis, The C. V. Mosby Co., 1965, $9.75).

SURGERY IN AMERICA—FROM THE COLONIAL ERA TO THE TWENTIETH CENTURY, ed. by *A. Scott Earle*, M.D. (Philadelphia, W. B. Saunders Company, 1965, $8.50).

THE MANAGEMENT OF FRACTURE AND SOFT TISSUE INJURIES, by the Committee on Trauma, American College of Surgeons. (Philadelphia, W. B. Saunders Company, 1965, $7.50).

GIVE AND TAKE: THE BIOLOGY OF TISSUE TRANSPLANTATION, by *Francis D. Moore*, M.D. (Garden City, Doubleday & Company, Inc., 1965, $1.25).

Short Courses in Iowa City

ORTHOPEDICS

Friday, October 15

Room E-331, Medical Amphitheater

9:15 a.m. "The Emergency Care of Open Fractures" —Carroll B. Larson, M.D.
10:00 a.m. "Complications of Femoral-Neck Fractures" —Michael Bonfiglio, M.D.
11:00 a.m. "Intramedullary Fixation of Long Bones" —Hugh M. Smith, M.D., professor of orthopedic surgery, University of Tennessee, Memphis
11:45 a.m. "Injuries to the Knee"—Bruce J. Brewer, M.D., associate professor of orthopedic surgery, Marquette University, Milwaukee
12:00 noon LUNCH
1:30 p.m. "Fractures of the Hand"—Dr. Larson
2:15 p.m. "Forearm Fractures in Children"—Reginald R. Cooper, M.D.
3:15 p.m. "Management of Fractures of the Lower Tibia"—William M. Krigsten, M.D., Sioux City
4:00 p.m. "Epiphyseal Injuries"—Dr. Smith
6:30 p.m. SOCIAL HOUR AND DINNER—University Athletic Club

Saturday, October 16

9:00 a.m. "Injuries Around the Elbow"—Dr. Brewer
9:45 a.m. PANEL DISCUSSION—Registrants are asked to bring x-rays that they would like discussed.

(Those wishing tickets for the Iowa-Minnesota football game, on Saturday, October 16, should get them from the Athletic Department, Business Office, Field House, Iowa City. Tickets are $5 each, and mail orders should include 25¢ for postage and handling, in addition to the price of the ticket(s).

The $20 registration fee includes the cost of a lunch ticket. This program is accredited for nine hours by the American Academy of General Practice.)

NURSING INSTITUTE ON PRENATAL AND PERINATAL PROBLEMS

Wednesday, November 3, 1965

Illinois Room, Iowa Memorial Union

9:00 a.m. MEDICAL-LEGAL CONSIDERATIONS IN OBSTETRICS AND PEDIATRICS
Obstetrical Problems—Clifford P. Goplerud, M.D.
Nursing Responsibilities—Leone B. Johnson, R.N., Division of Maternal and Child Health, State Department of Health
Pediatric Problems—Donal Dunphy, M.D.
Legal Aspects—Dean Mason Ladd, U. of I. College of Law
Hospital Responsibilities—Charles W. Ingersoll, administrator, Broadlawns-Polk County Hospital, Des Moines
11:00 a.m. USEFUL HORMONES IN OBSTETRICS AND GYNECOLOGY
General Principles of Hormonal Therapy—Michael E. Yannone, M.D.
The Nurse's Role in Patient Orientation—Dorothy J. Ryan, R.N.
Ovulation Control—James P. Jacobs, M.D.
Religious Aspects—Rt. Rev. Msgr. W. B. Bauer, Sioux City
Prevention of Abortions—Leo J. Dunn, M.D.
Menopausal Syndrome—Clark W. Stevens, M.D., Dubuque
QUESTION AND ANSWER PERIOD
12:30 p.m. LUNCHEON
2:00 p.m. TEENAGE OBSTETRICS
The Problem in Iowa—Madelene M. Donnelly, M.D., Division of Maternal and Child Health, State Department of Health
Obstetrical Complications—Charles A. White, M.D.
The Newborn—Gerald Solomons, M.D.
The Role of the Public Health Nurse—Marilyn Russell, R.N., Des Moines-Polk County Health Department
Emotional Considerations—Albert S. Norris, M.D.
Dietary Problems—Robert E. Hodges, M.D.
Social Aspects—Thea Sando, A.C.S.W.
Support of the Patient in Labor—Anna E. Overland, R.N.
Religious Considerations—David Belgum, Ph.D.
What Facilities Are Available?—Ross Wilbur, A.C.S.W., State Department of Social Welfare
QUESTION AND ANSWER PERIOD
6:30 p.m. DINNER—Iowa Memorial Union
Speaker: Thelma Luther, R.N., educational director, Division of Public Health Nursing, State Department of Health

Thursday, November 4, 1965

9:00 a.m. WHAT'S NEW IN GENITAL MALIGNANCY?
How Important Is Cancer Detection?—Robert M. Kretzschmar, M.D.
Recent Advances in Pediatric Malignancy—James C. Taylor, M.D.
Recent Advances in Gynecologic Malignancy—William R. Anderson, M.D.
Terminal Care—William C. Keettel, M.D.
Hospital Nursing Care—Doris Wilkinson, R.N.
Local Facilities—Adelia Liercke, R.N., Iowa City Visiting Nurse Association
12:30 p.m. LUNCHEON

(The registration fee is $10. This program is accredited for 9½ hours by the American Academy of General Practice.)

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., COMMISSIONER

Influenza Immunizations 1965-1966

The Advisory Committee on Immunization Practices of the U. S. Department of Health, Education and Welfare, has released its recommendations for influenza immunization and control for 1965-1966:[1]

"Influenza was confirmed in a majority of states in the eastern two-thirds of the country during the 1964-1965 season. Although widespread in some areas, the level of involvement was generally low, and excess pneumonia-influenza mortality was only modestly elevated. Most states in the Far West were unaffected.

"Numerous strains of Type A_2 virus were isolated and subsequently characterized as showing a drift in antigenic constitution from previous A_2 viruses. There was, however, no major antigenic change. A few strains of Type B influenza virus were recovered from discrete outbreaks recognized in the West.

"Based on available morbidity and mortality data the 1964-1965 influenza experience in the United States was limited. The last major epidemic of Type A illness occurred in 1962-1963 and on the West Coast in 1963-1964. In view of influenza's two- to three-year periodicity, increased amounts of influenza may be expected in the coming season. Areas that were most involved in 1964-1965 might expect a lesser amount of disease in 1965-1966.

"Although Type A viruses may predominate in 1965-1966, the presence of Type B influenza in the U. S. and its prevalence in Europe in 1964-1965, increases the expectation of Type B outbreaks in 1965-1966 in the U. S."

While the above paragraphs explaining the expected incidence for the coming year are presented as a quotation, the remainder of the material is summarized.

High Risk Groups—Even though large-scale epidemic outbreaks of influenza are not at this time anticipated for the coming winter, immunization of special groups against influenza is still strongly advised. Patients in the following categories have experienced the highest influenza mortality rates and therefore should have specific protection as a routine practice:

A. Persons at all ages who suffer from chronic debilitating disease; e.g., chronic cardiovascular, pulmonary, renal or metabolic disorders, in particular:
   1. Patients with rheumatic heart disease, especially those with mitral stenosis.
   2. Patients with other cardiovascular disorders, such as arteriosclerotic heart disease and hypertension, especially those with evidence of frank or incipient cardiac insufficiency.
   3. Patients with chronic bronchopulmonary disease; for example, chronic asthma, chronic bronchitis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, pulmonary tuberculosis.
   4. Patients with diabetes mellitus and Addison's disease.

B. Pregnant women.

C. Persons in older age groups; those over 45 and particularly those over 65.

Serious consideration should also be given to immunizing those in medical and health services, public safety, public utilities, transportation, education and communications fields. In industries and large institutions where absenteeism is of particular concern, large-scale immunization programs are to be encouraged.

Vaccine Composition—Recent isolates of the Type A viruses demonstrate a continued alteration in antigenic structure. Accordingly, it will be noted that a more recent strain of influenza A_2 has been added. The antigenic composition of the vaccine for the 1965-1966 season is as follows:

Type	Strain	CCA Units Per cc
A	PR8	100
A_1	Ann Arbor 1/57	100
A_2	Japan 170/62	100
A_2	Taiwan 1/64	100
B	Maryland 1/59	200
		600

Dose and Schedule of Vaccination—Vaccination should begin as soon as practicable after September 1, and ideally should be completed by mid-December. It is important that immunization be carried out before influenza occurs in the immediate area, since there is a two-week interval before the development of antibodies.

A. Primary Series—Those not vaccinated since July, 1963, when the last major change in vaccine

formulation was made, should receive an initial subcutaneous dose of polyvalent vaccine followed by a second dose two months later. It is to be pointed out, however, that even a single dose can afford significant protection. A second dose given as early as two weeks following the first will enhance the protection.

ADULTS AND CHILDREN OVER 12 YEARS
1.0 ml. dose subcutaneously on two occasions as specified above.

CHILDREN 6 TO 12 YEARS*
0.5 ml. dose subcutaneously on two occasions as specified above.

CHILDREN 3 MONTHS TO 5 YEARS*
0.1-0.2 ml. of vaccine given subcutaneously on two occasions separated by one to two weeks followed by a third dose of 0.1-0.2 ml. about two months later.

B. Revaccination—Those vaccinated since July, 1963 need receive but a single booster of vaccine at the dose level specified for the primary series.

Contraindications—Since the vaccine viruses are produced in eggs, the vaccine should not be administered to those who are hypersensitive to eggs or egg products.

* Since febrile reactions in this age group are common following influenza vaccination, an antipyretic may be indicated.

1. MORBIDITY AND MORTALITY WEEKLY REPORT, U. S. Department of Health, Education and Welfare, week ending June 19, 1965.

AVAILABLE FROM THE STATE DEPARTMENT OF HEALTH

For venereal disease control
- Procaine penicillin (aqueous or oil suspension)
- Benzathine penicillin G (Bicillin)
- Achromycin (250 mg. capsules)

Immunizing agents
- Triple toxoid
- Diphtheria-tetanus toxoid (Combined, absorbed or precipitated—Adult type)
- Salk and Sabin poliomyelitis vaccines
- Typhoid vaccine triple (Typhoid, para A and para B)
- Smallpox vaccine

Rabies control materials
- Duck embryo anti-rabies vaccine
- Anti-rabies serum

Histoplasmin

Snake anti-venom (kept at poison center and sub-centers)

Gamma globulin (for protection of people exposed to measles, German measles, or infectious hepatitis, if the risk is sufficiently great)

For detailed information, see the April, 1965, JOURNAL, *pages 225-227, or telephone the Department.*

A Summary of Classes for Diabetics Held in Des Moines County November, 1964, and April, 1965

Iowa's population, with its predominance of persons in older age groups, is seeing a rise in the prevalance of diabetes. The busy physician is finding it more difficult to instruct the increased load of diabetic patients to the level of understanding about their condition that would promote optimum control of the disease. Therefore, the State Department of Health wants to report the action program in one community on behalf of its diabetics. The following program summary, prepared by Mrs. Elizabeth M. Thompson, R.N., Des Moines County Public Health Nurse, may serve as a guide to the other communities that wish to initiate diabetic education classes.

Reading about classes for diabetics and receiving questions from people in the city of Burlington and in Des Moines County prompted the county public health nurses to consider what they might do to aid diabetics in their county. They consulted with the county medical director, and he then presented the problem to the Des Moines County Medical Society. The decision of interested groups was that classes should be held for diabetics.

In setting up the program, members of the Des Moines County Health Unit, working with the county medical director, obtained support and services of physicians especially interested in diabetes and of members of the nursing and dietician staffs of the hospitals in Burlington.

Publicity consisted of use of the program, "Spotlight of the Day," on a local radio station by the public health nurse responsible for the classes. This was followed by spot announcements to encourage enrollment and attendance. The local newspapers, one daily and two weekly, announced the classes and schedule of classes.

The first series of six classes at weekly intervals was started in November, 1964. These were afternoon meetings which, to those in charge, seemed to assume the character of social gatherings. The second series, started in April, 1965, were held in the evening. This timing allowed for a better cross-section of pupils and resulted in a group of 33 people, with an average weekly attendance of 28. Ages of the members varied from 10 to 84 years. They included working people, mothers and school children. The first series of classes allowed time for cooking and an exchange of recipes, but the April series didn't, for that activity was regarded as costly and probably not especially worthwhile. From further experiences obtained during the first classes, it was decided that questions should be solicited from class members for answer by the physicians who were scheduled to be present at the fourth and sixth sessions.

The following is an outline of topics discussed at the six meetings:

1st Class Meeting

Welcome and Discussion of Purpose of Classes—County Public Health Nurse
What Is Diabetes?—Member of nursing staff of one of the Burlington hospitals

2nd Class Meeting

The Diabetic Diet and How to Use the Prescribed Exchange List—Chief dietician from one of the Burlington hospitals

3rd Class Meeting

Importance of Personal Hygiene and Some of the Common Illnesses of the Diabetic—Member of nursing staff of one of the Burlington hospitals
Proper Collection and Testing of Urine in Management of Diabetes—Member of nursing staff of one of the Burlington hospitals
Questions Submitted for Physician Scheduled to be Present at the Next Class Meeting

4th Class Meeting

Physician to Answer Questions Submitted the Previous Week
Foot Care for Diabetic Patient—Member of nursing staff from one of the Burlington hospitals

5th Class Meeting

Medications and How They Work for Control of Diabetes and Methods of Administration for the Diabetic—Member of the nursing staff of one of the Burlington hospitals
Film: "Care of Diabetes, Complicated"—County Public Health Nurse

6th Class Meeting

Diabetes and How to Live With It—Physician
Questions from Class
Film: "Care of Diabetes, Uncomplicated"—County Public Health Nurse

Pamphlets and other publications distributed to those attending the classes included: FACTS ABOUT DIABETES, American Diabetic Association, Inc.; YOU AND DIABETES, The Upjohn Company; CALORIE CONTROL FOR YOU, The Upjohn Company; FOOT CARE FOR THE DIABETIC PATIENT, U. S. Department of Health, Education and Welfare; EMOTIONS AND PHYSICAL HEALTH, Metropolitan Life Insurance Company; ORDER FORM, American Diabetes Association, Inc.

The U. S. Public Health Service has produced a teaching aid, "Just One in a Crowd." This is a six-session set consisting of slides and magnetic sound tapes, and is available from the Division of Chronic Diseases and Aging, State Department of Health. It may serve as core material for a contemplated program.

Morbidity Report for Month of July, 1965

Diseases	1965 July	1965 June	1964 July	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	111	186	124	Hancock, Johnson
Typhoid fever	0	1	0	
Smallpox	0	0	0	
Measles	53	512	55	Buena Vista, Keokuk
Whooping cough	2	4	12	Buchanan, Des Moines
Brucellosis	1	9	14	Crawford
Chickenpox	49	305	63	Dubuque, Scott
Meningococcic meningitis	1	1	0	Jones
Mumps	54	501	181	Keokuk, Scott
Poliomyelitis	2	0	0	Palo Alto, Polk
Infectious hepatitis	29	27	6	Des Moines, Dubuque, Mills
Rabies in animals	27	17	47	Franklin, Hancock, Polk, Sac
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	23	15	23	For the state
Syphilis	75	64	89	For the state
Gonorrhea	338	150	106	For the state
Histoplasmosis	1	0	1	Linn
Food intoxication	0	0	0	
Meningitis (type unspecified)	1	0	3	Johnson
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	0	1	Dubuque
Salmonellosis	11	5	2	Linn, Polk, Wapello
Tetanus	0	1	1	
Chancroid	0	0	0	
Encephalitis (type unspecified)	2	1	2	Dubuque
H. influenzal meningitis	0	1	1	
Amebiasis	2	0	0	Boone
Shigellosis	4	3	3	Scott
Influenza	0	53	2	

Woman's Auxiliary News

Your President Says—

The annual visit of State Auxiliary officers which this year is to the western area of the state composed of Districts III, IV, and XI is scheduled for November 3, 4, and 5.

The officers planning to participate in this program are: Mrs. Henry Boe, president, Sioux City; Mrs. S. M. Korson, president-elect, Independence; Mrs. R. E. Hines, 1st vice-president and membership chairman, Des Moines; and Mrs. M. E. Olsen, 2nd vice-president and Yearbook and Program chairman, Minden. Mrs. Hazel T. Lammey, our administrative secretary from the headquarters office, Des Moines, will join the officers in their visits.

The physicians' wives of the western area will be working together on the State Annual Meeting Planning Committee, so you will have an opportunity to get together and to assist Mrs. M. O. Larson, Hawarden, who is the area planning chairman.

The officers will have attended the National Conference for state presidents and presidents-elect in Chicago and the North Central regional workshop, and should be bursting with answers to your questions.

Mark your calendar now. You are urged to attend the meeting scheduled in your district. Let us get to know each other, and exchange ideas, comments, and questions, so we can continue with success.

—Patti Boe
(Mrs. Henry)

Quarterly Treasurer's Report 1964-65

MEMBERSHIP

Total Membership 1963-64	1,232
Not Paid 1964-65	− 75
Current Members	1,157
New or Reinstated Members	+ 110
Total Membership 1964-65	1,267

This represents a gain of 35 members over the previous year.

Mrs. Byron M. Merkel
Treasurer
July 27, 1965

Excerpts From the Report of the Forty-Second Annual Convention

Regional Workshops

For the purpose of better delineating WA/AMA and AMA directives and plans, the National Auxiliary will sponsor—and AMA will finance—four regional workshops. The North Central workshop will be held in Chicago, October 13-14. Three regional workshops will be held during the month of October. These will be set up for the state presidents, presidents-elect and the chairmen of six state committees—Community Service, Health Careers, Legislation, Membership, Mental Health, and AMA-ERF. Complete details will be sent to those concerned in the near future by the National headquarters office. We regret it will be necessary to limit attendance to those receiving invitations.

Programs for the Year

All National committee programs will be published in the DIRECT-LINE NEWSLETTER, the first issue of which was mailed in August, and in this same section of all issues of MD'S WIFE. The plan has been adopted to reduce the number of mailings from headquarters office and to relieve, to some extent, the burden imposed upon state and county officers and chairmen in transmitting National Auxiliary and AMA data-information down to the county and membership level.

There will be approximately three mailings of the NEWSLETTER and six issues of MD'S WIFE, and each will contain a Direct Line section for the above purpose. In this way, current information and happenings can be brought promptly to the attention of the entire membership.

MD's Wife

The official publication of the National Auxiliary will have a new name—MD'S WIFE—a new format and new editorial contents starting in September. It will be published six times a year and will be sent to every member of the Auxiliary. As mentioned above, a Direct Line section, carrying out the pattern of communication established this year, will appear in each issue. An effort is being made to secure acceptable advertising to augment

the National income and provide the many new services under discussion this year.

News From Around the Hawkeye State

Scott County

On April 29, 1965, the Scott County Medical Auxiliary met at the Outing Club in Davenport, for luncheon. Thirty members were present. Mrs. Ralph Lagoni, of Eldridge, introduced Mrs. James Mohr, of Eldridge, chairman of Scott County Farm Bureau Women, who gave a stimulating talk on safety, with particular emphasis on her organization's activities in the various areas of safety.

Two social events were held this spring, promoted and planned by the membership committee. Mrs. Alex Boone graciously presided at a morning coffee on May 20 in the home of Mrs. R. V. Daut. On June 2, the day of the annual Scott County Medical Society picnic for doctors, the wives enjoyed a catered dinner at the home of Mrs. Ray Berger. Mrs. Stanley Smazal was in charge of this successful event. Doctors' wives not members of the Auxiliary were invited to these two events.

During the month of May, members were exceedingly busy in volunteer activity. The flooding of the Mississippi prompted our organization to volunteer its manpower to the Red Cross. Members answered telephones, assisted at shelters and helped man a Rehabilitation and Claims request center. Additionally, they assisted Scott County doctors in giving typhoid shots on three consecutive Saturdays. During the Tri-State Blood Banking Convention, in Davenport on May 21 and 22, our members acted as hostesses in shifts of an hour each, and assisted in the decoration of the Thunderbird, an excursion boat where the Saturday-night dinner meeting was held. All of this activity was masterfully managed by our excellent new Community Service Chairman, Mrs. Robert Foley.

MRS. JOSEPH L. KEHOE, *President*

Polk County

The Woman's Auxiliary to the Polk County Medical Society recently honored the 1965 graduating class of the Des Moines School of Practical Nursing at a reception at Slinker School, Des Moines.

Mrs. W. B. Chase, Jr. was chairman of the committee making arrangements. She was assisted by Mrs. Paul From, Auxiliary president, and the following members: Mesdames L. O. Ely, S. H. Robinow, J. W. Green and R. J. Reedy. Marie Howland of the Seventh District, Iowa Nurses' Association, and Elizabeth Harling, co-ordinator of the Des Moines School of Practical Nursing were other members of the committee.

The School of Practical Nursing is sponsored by the Department of Adult Education, Des Moines Public Schools. Graduation ceremonies were held on August 12 at Franklin Junior High School.

Webster County

The Webster County Medical Society and its Auxiliary, which have a picnic every summer, made this year's gathering a farewell for Dr. and Mrs. Otto Glesne. The picnic dinner at the Izaak Walton League clubhouse was followed by a program of travel pictures presented by Dr. and Mrs. E. J. Bock, who recently toured seven European countries.

Dr. and Mrs. Glesne are leaving Fort Dodge this fall for their new home in Northfield, Minnesota, where Dr. Glesne has accepted a student-health post at St. Olaf College. They have been entertained by many friends prior to their departure.

Black Hawk County

After installation of officers at our May meeting, the new officers held one board meeting to set up programs for the fall. Our group will carry on visual screening, projects to raise money for AMA-ERF, a mental health program and a retarded children program to inform us. Plans have started for our medical Charity Ball to be held in February, 1966. Several additional projects will be formed as we start our meeting year.

MRS. ROBERT BUCKLES, *President*

Councilor Report—District VIII

Having missed the called Executive Board meeting on May 18, I did not report on having attended a special meeting earlier in the month called by Mrs. Hines for the purpose of discussing members-at-large, etc. It was a most interesting meeting, and we have great hopes that good for the Auxiliary in general will develop from it.

As a member of the Scott County Auxiliary, I worked on the Red Cross flood disaster group. The Auxiliary manned the reception desk for five consecutive weeks, with two girls working each day—8:00 to 1:00 and 1:00 to 5:00. For three days during May, too, we helped with transportation, etc. for members attending the Tri-State Blood Bank.

At a reception for Senator and Mrs. Jack Miller, July 18, Dr. Bishop and I both made a special point to express appreciation for his stand on many of the present issues—especially the one he took on Medicare.

MRS. JAMES BISHOP

International Health

World Medical Relief
11745 12th Street
Detroit, Michigan 48206

The above is the new address to be used for our overseas program. Shipping expenses are your own, but the items below are needed and this is our chance to send items we don't need.

DRUGS—All samples in their original packages.

CURRENT BOOKS—Also medical journals published within last four years.

INSTRUMENTS

JOHNNY COATS—White shirts with sleeves shortened and hemmed; buttons removed and ties attached; collars removed and bias tape sewed around the neck.

Mrs. F. P. Ralston, chairman of the Committee on International Health, reported on her interest in Project HOPE. Through her efforts, the Knoxville theatre manager, Mr. Carl Schwanebeck, is going to run the film free of charge in the afternoon in September. Similar arrangements can be made in your community.

Project HOPE

Project HOPE is the principal activity of the People-to-People Health Foundation, Inc., of Washington, D. C., an independent, non-profit corporation. Its objective is to teach the latest technics of American medical science to medical, dental and paramedical personnel in developing countries.

The Foundation is incorporated under the charitable and educational provision of the District of Columbia Code. It enjoys tax-exempt status with the Internal Revenue Department of the U. S. Government.

The 15,000-ton Navy hospital ship *U.S.S. Consolation* was refitted, lent to the Project in 1960 and renamed *S.S. HOPE*. The vessel is permanently staffed with doctors, nurses and paramedical personnel. Rotating teams of physicians, surgeons and dentists in 20 specialties volunteer two-to-six months' service without pay, and are flown to the ship. At the same time, HOPE teams in hospitals and clinics in cities and remote areas on shore treat thousands, and screen cases which warrant hospital care and will be medically instructive to the trainees aboard.

S.S. HOPE left San Francisco on October 16, 1960, for its maiden voyage to Indonesia and South Viet-Nam. The second voyage was to Peru, the third to Ecuador, and the fourth to the Republic of Guinea, where the ship will remain until August 15, 1965. The voyages average 10 months.

HOPE is on three continents. The ship is in Africa, but HOPE teams continue programs in hospitals at Saigon, Trujillo, Cuenca, on converted gunboats on the Amazon, and at the port city of Guayaquil, Ecuador.

About five million dollars annually is needed to sustain the operation of the *S.S. HOPE* and Project HOPE's land-based programs. The Project depends primarily on private resources, and receives tax-free contributions from thousands of individuals and groups, including support from organized labor, business and industry. It also has received financial assistance in lieu of a maritime subsidy from the U. S. Government for operation of the vessel.

HOPE is endorsed by both the American Medical Association and the American Dental Association. World leaders have acclaimed its objectives and successes. Americans can help HOPE give hope to millions around the globe by donating their talents and making financial contributions. Queries and donations may be sent to:

PROJECT HOPE
208 S. LaSalle St., Rm. 685
Chicago, Illinois 60604

A Word of Caution!

As doctors' wives, our opinions are never just our own. As representatives of our husbands' profession, we may be called upon to give talks from time to time.

It was suggested at the last board meeting of the State Auxiliary that you be asked to send a carbon copy of your speech to the Iowa Medical Society office prior to its presentation so as to avoid any possible misstatements or misinterpretations. Many pamphlets and brochures are available at the Iowa Medical Society office for your convenience, and you can obtain them merely by asking. A moment of caution may well prevent embarrassing situations.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

President-Elect—Mrs. S. M. Korson, Box 111, Independence 50644

Recording Secretary—Mrs. L. H. Prewitt, 33 Birchwood Hills, Ottumwa 52501

Corresponding Secretary—Mrs. H. C. Leiter, 2400 E. Solway, Sioux City 51104

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Veverka, Prairie City 50228

Co-Editor—Mrs. R. R. Carlson, 826 Sherman Drive, Ankeny 50021

Organized Medicine at All Levels Conducts

Continuing Programs for Health-Care Betterment

In its constant efforts to define and to do something about America's major health problems, organized medicine is active at all levels—national, state and local. At a conference held in Chicago during August, physician representatives and staff members of the Iowa Medical Society met with their opposite numbers from all of the other states, and with the officers of the American Medical Association, to coordinate their public-service activities, to exchange ideas and to share their enthusiasms.

AMA PROJECTS

The doctors and laymen who man the headquarters office of the AMA had some recent accomplishments to describe. In the past few months, the AMA Council on Drugs has published a thick volume entitled NEW DRUGS that will aid private practitioners in treating their patients effectively and safely. During the past 16 years, new preparations have almost entirely replaced the medicines that were in use previously, and since the average physician completed his formal training before most of them were introduced, it is especially important for him to be provided unbiased information about their use. Up to last year, the Council on Drugs tested and made reports on new drugs in the weekly JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION as promptly as it could, and it collected those reports and republished them in a series of annual volumes called NEW AND NONOFFICIAL DRUGS. The Council's testing program and its periodic reports in JAMA are continuing, but NEW DRUGS, revised and reissued annually, will present composites of both AMA and other investigators' evaluations. Whereas NND was useful principally to pharmacologists, NEW DRUGS will be a convenient reference work for physicians. When the doctor wants to choose the best medication for a particular patient, he will find all of the drugs useful in treating that patient's condition grouped together for comparison. Also, the risk factors he faces in administering each of them have been given proper emphasis. The AMA offers the book to private practitioners at $5 per copy, and to medical students, interns and residents at $4. (See book review on page 547 in this month's JOURNAL.)

Another facet of the AMA program to help doctors in the efficient and safe use of medicines is the Registry of Adverse Drug Reactions which it founded last year. Even though Food and Drug Administration regulations require the exhaustive testing of each new medication prior to licensure, it frequently happens that some of the drug's more infrequent side-effects appear for the first time months or even years after its release to physicians for general use. In order to catalog and evaluate these late-appearing hazards, the AMA is asking its members throughout the country to prepare detailed reports on untoward effects that they have observed in their patients, it receives similar notifications from the United States Public Health Service and other governmental health agencies and institutions, and then it publicizes them to the profession in JAMA and in NEW DRUGS.

AMA representatives recounted the progress that their organization is making in several other important areas. TODAY'S HEALTH GUIDE is a comprehensive reference work on medical problems which was published just a few months ago and which the audience was told should be in every American's home. The AMA (535 North Dearborn Street, Chicago 60610) offers the book to the public at $4.95, and thus far has distributed 80,000 copies of it.

At the AMA Chicago headquarters during the past year, laboratories for basic medical research have been set up, and competent men have been employed to pursue studies in fields such as genetics, microbiology and nutrition. The AMA's research will not compare in volume with that which is conducted at Bethesda, Maryland, and elsewhere by the National Institutes of Health, and that which is done by the pharmaceutical manufacturers at their various laboratories and by the faculties of medical colleges, but nonetheless it will contribute significantly to scientific knowledge and will involve no governmental subsidies.

Similarly, when the AMA first undertook a program of loans to medical trainees three years ago, it made a start at filling an unmet need but was by no means pioneering. Its component organizations, such as the Iowa Medical Society, already had well-estalished programs for helping medical undergraduates remain in school. The AMA's plan is more comprehensive, however, in that it offers assistance to interns and residents, as well as to medical undergraduates. (The more recently established federal loan program, incidentally, does not do this.) And rather than bypassing private enterprise, the AMA program fosters it by undertaking to guarantee loans made by commercial banks. To date, $17 million has been lent to 15,000 prospective physicians, and no more than 35 of the borrowers have defaulted. In several of the latter instances, death was the reason why the loan was not repaid.

The AMA has an international health division that recruits physicians for temporary or permanent service in underdeveloped countries—most notably, at the moment, in South Vietnam, where there is just one doctor for every 23,000 people. Because America itself has a shortage of physicians, however, the AMA places emphasis on temporary foreign service, and on teaching programs in which the Americans train local men and women in the rudiments of nutrition, sanitation and medical care.

Several of the AMA's constant series of conferences on important health problems were publicized at the August meeting of state and local medical society representatives. For example, at the Drake, in Chicago, on Saturday, November 20, the AMA will conduct a symposium on venereal-disease control, with the cooperation of the American Social Health Association, the USPHS and other organizations. These meetings focus attention on significant difficulties, on their causes, and on methods for solving them.

STATE AND LOCAL MEDICAL SOCIETY PROJECTS

State and county medical societies carry on an almost incredible number and variety of activities that are in the public interest. They help to locate additional physicians where they are most needed; they maintain grievance committees to arbitrate disagreements between physicians and patients; and they advise state and local officials on the medical aspects of driver-licensure and innumerable other governmental functions. The list is too long to recount here. Three state or local projects, however, were highlighted at the August meeting in Chicago as ones that will require special attention in the months ahead.

One of the speakers expressed great satisfaction over the fact that no fewer than 40 state medical organizations have committees which are constantly warning the public about the dangers of quackery in general and about the fraudulent "cures" that are being touted in their particular areas. People generally are far better informed on such hazards than they used to be, and the discovery of specific and highly effective drugs and treatment procedures for doctors of medicine to use on patients with hitherto fatal ailments has narrowed the scope of the quacks' efforts. But fad diets, impressive-appearing but useless machines, unscientific theories about disease, and secret-formula patent medicines still abound. Furthermore, the people who rely upon them not only are wasting their money, but in all likelihood are letting their health problems persist to the point at which medical science can do little or nothing to save their lives.

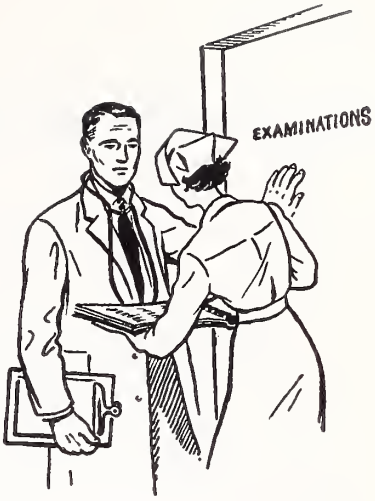
State and local medical societies were encouraged to guide the medical staffs of hospitals in creating utilization committees and making them efficient. For several years, the physicians who care for patients in the larger hospitals have had tissue committees constantly supervising the surgery that is performed there, and making sure that all operations are done safely and competently. At present, in Iowa among other places, the State Medical Society and the State Hospital Association are conducting a survey that hopefully will establish some norms for the lengths of hospitalization and treatment for each of several common medical and surgical problems. Thereafter, the utilization committee—or perhaps the whole medical staff in a small hospital—can scrutinize instances in which patients have been hospitalized for unusual lengths of time. Each patient, of course, is different from every other, but it is hoped that comparisons will encourage increased efficiency in treatment, and by shortening hospital stays, will retard increases in hospital-insurance premiums.

The third state and local medical project on which the speakers at the August meeting threw a spotlight was voluntary health-facilities planning. Prompt action is essential in this endeavor, not only because there is a job that needs doing but also because governmental agencies are likely to preempt it, to give physicians too weak a voice in decision-making, and in thinly-populated states like Iowa, to overlook the special needs of rural and small-town people.

The justification for area-wide health-facilities planning cannot be questioned. The administrator, board of directors and sponsoring organization of each hospital are anxious to make their institution the best and most complete in their area. Consequently they have a tendency to overbuild and to install equipment that is already available at neighboring hospitals, with the result that room-occupancy rates fall, and expensive machines remain idle too much of the time. Similarly, nursing homes can be overbuilt, and the resultant financial problems can necessitate increased monthly rates and decreased services at all of them.

Aside from the fact that voluntary action is always preferable to governmental compulsion, the Iowa Medical Society must lead interested groups in cooperative area health-facilities planning because the application of rules-of-thumb which are proper only for metropolitan areas might otherwise force the closing of some of our county hospitals and even the gathering of health personnel into a few of our largest towns.

THE DOCTOR'S BUSINESS



Life Insurance Dividends

HOWARD D. BAKER
Waterloo

The matter of dividend treatment frequently poses an important problem in the organization of an insurance portfolio. With regard to the disposition of dividends, there are four basic options in most participating life insurance contracts. These options are:

THE CASH OPTION

This option provides that the annual dividends will be paid in cash. In general, this option has little use for the average doctor who is building up his insurance program. It is of value only on paid-up, participating policies, where the policyholder has no need for additional insurance and is no longer paying premiums against which the dividends could be offset.

THE PREMIUM OPTION

This option provides that dividends will be used annually in partial satisfaction of premiums due. It is most useful for the young doctor who is building up a large insurance program and wants MAXIMUM protection. He obviously can carry much more insurance by paying the *net premium* (premium less dividend) than he could by using dividends otherwise. If he later improves his financial position or becomes uninsurable, he can change his election to a paid-up insurance option, if it is then desirable.

THE PAID-UP INSURANCE OPTION

This option provides for the application of annual dividends to purchase paid-up additions to your life insurance policy. This option is generally most useful in a situation where the doctor is 40-50 years of age and does not have as much insurance as he should have, or would like. It is also quite valuable to the doctor who has become uninsurable. In these situations, he can elect to have the dividends used to purchase paid-up additions, which will increase his protection and also will maintain a cash value about equal to, or slightly greater than, the original dividends invested. This gives the advantage of maximum protection, but still retains a cash reserve for retirement or emergency use.

THE INTEREST OPTION

This option provides for the deposit of dividends with the company to accumulate at interest. This option is generally outmoded because of the low rate of return (2-2½ per cent), and because with most low-net-cost companies, the paid-up additions will have a *cash value* equal to or in excess of the accumulation of dividends at interest over a period of years.

In general, this option would be worthy of consideration only on contracts where one can elect to convert accumulated dividends and interest to paid-up insurance at any time. Such a privilege is quite rare on policies today.

What about the doctor who years ago elected to leave his dividends at interest, as many did? He now has a sizeable accumulation drawing 2 to 3 per cent *taxable* interest. He should review his individual situation and probably change his dividend option. If he needs protection through additional insurance, he should take a paid-up insurance option on future dividends, and to the extent possible on the accumulated dividends. To the extent that paid-up additions can't be bought with the accumulation, it is our feeling that he should withdraw these dividends and invest them prudently elsewhere, for a greater income and growth advantage. This also applies to doctors in situations where present insurance, reduced insurance needs and other assets make it unnecessary for them to consider additional insurance.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Iowa Association of Medical Assistants

AAMA Annual Meeting—New York City

Doctor, would you like *your* medical assistant to know more about:

- Using available communications equipment?
- Work simplification?
- Mechanics of and reasons for following patients throughout their health needs?
- Working with medical management consultants to obtain the best results for you?

Then encourage her to attend the annual meeting of the American Association of Medical Assistants, October 13-17, in New York City. All these topics, plus other phases of office management, will be discussed during the two-day educational seminar planned for the meeting at the Roosevelt Hotel.

In addition to the symposium on office management, your assistant will hear talks on: "The Patient—The Office VIP," "Medical Quackery," and "Medical Who-dun-its."

There will also be workshops on: Parliamentary Procedure; Certification; Membership; Leadership; Public Relations; and Treasurers.

The AAMA House of Delegates will be in session Wednesday and Thursday, October 13 and 14, and the educational programs and general assembly will follow on Friday and Saturday. The closing session will be Sunday morning.

For the medical assistant with some vacation time there is much to see and learn in New York City, starting on Monday, Oct. 11. That has been designated "Medical Assistants Day at the Fair," and a special tour has been planned with buses leaving for the World's Fair at 9 a.m. There is a fee of $7.50 for this tour, which includes transportation to the Fair, admission, brunch and special tours.

On Tuesday there is a special tour of the city and of the U.N. with lunch at U.N. The tour starts at 9:30 a.m. and costs $8.00.

An alternative tour, starting at 9:30 a.m. and costing $5.50 goes to Rockefeller Center and includes a fiesta brunch at La Fonda del Sol. This tour will be over in time for delegates to return to the hotel for the meeting of the House of Delegates.

For those who want a little special entertainment, reservations may be made for dinner, drink and floor show on Friday evening at the Hawaiian Room of the Hotel Lexington—$10.00 (including tax and tips).

Luncheon speaker Friday noon will be AMA President James Z. Appel, M.D., of Lancaster, Pa. Past AAMA presidents and medical assistants who have become certified will be honored, and awards will also be given to chapters judged outstanding in areas of membership and publications. Scholarship fund certificates will also be presented.

Climaxing the week's events will be the Saturday banquet honoring state chapter presidents. At that time, AAMA President, Mrs. Rose Merritt, Savannah, Ga., will present outstanding merit and honorary membership awards, and Miss Marge Slaymaker, Newton, Kansas, will be installed as 1965-66 president.

Master of ceremonies for the Saturday banquet will be Mr. Robert Earle, moderator of TV's "College Bowl." In addition to his radio and television work Mr. Earle is a professor and a communications and community relations specialist, and is currently teaching a course in public relations at Cornell University's noted school of hotel administration.

And for those who still have some vacation time left, a special post-convention tour to Bermuda is available. Departure is Sunday October 17 by jet plane and the Princess Hotel is our destination. The total charge of $155.00 includes transportation, transfers, room (based on two in a room) and two meals a day. A $55.00 deposit is required before August 15 and the balance must be paid by October 1.

Registration fee for the AAMA Convention is $35.00. This includes the Friday luncheon, Saturday luncheon, Saturday banquet and Sunday breakfast. The luncheon on Thursday is for delegates only. For those unable to attend before Saturday, there will be a reduced registration and a limited number of individual meal tickets available.

Hotel reservations at the Roosevelt should be made with the Hotel, and the hotel charges are not included in the registration fee for the convention.

We hope to see many Iowa medical assistants in New York City October 11-17.

—*Helen G. Hughes*

JOURNAL of The IOWA MEDICAL SOCIETY

U.C. MEDICAL CENTER LIBRARY
OCT 12
San Francisco 22

IN THIS ISSUE

- And Freely Speak
  Philip D. Jordan, Ph.D.—Page 557
- Changing Concepts in Osteoporosis
  David D. Hunt, M.D.—Page 563
- Renal Arteriography by the Percutaneous Transfemoral Catheter Method
  Steven H. Cornell, M.D.—Page 569
- Communication Between Physician and Dentist
  James H. McLeran, D.D.S., M.S.—Page 579
- University of Iowa College of Medicine Clinical Pathologic Conference—Page 588

Iron deficiency is effectively treated with Zentinic®

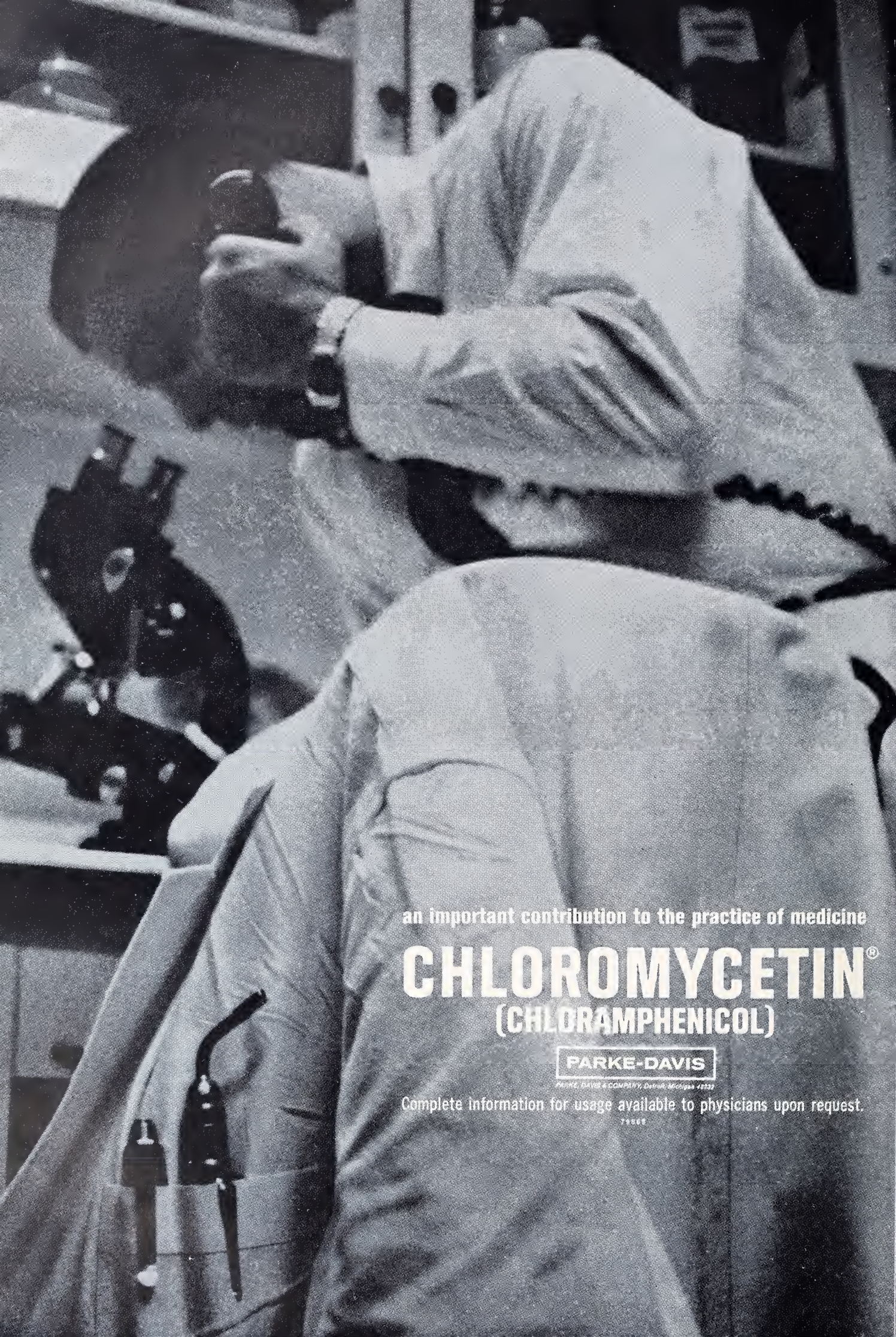
Zentinic is an oral multifactor hematinic in Pulvule® form. ■ It offers efficient treatment of iron deficiency in patients with menorrhagia, pregnant patients with depleted iron stores, and adolescent patients with erratic eating habits complicated by the onset of menstruation and rapid growth. ■ The Zentinic formula contains 100 mg. of elemental iron as ferrous fumarate and 200 mg. of vitamin C to aid absorption of the iron by helping to maintain it in the ferrous state. ■ In addition, the B complex vitamins are included for general nutritional support.

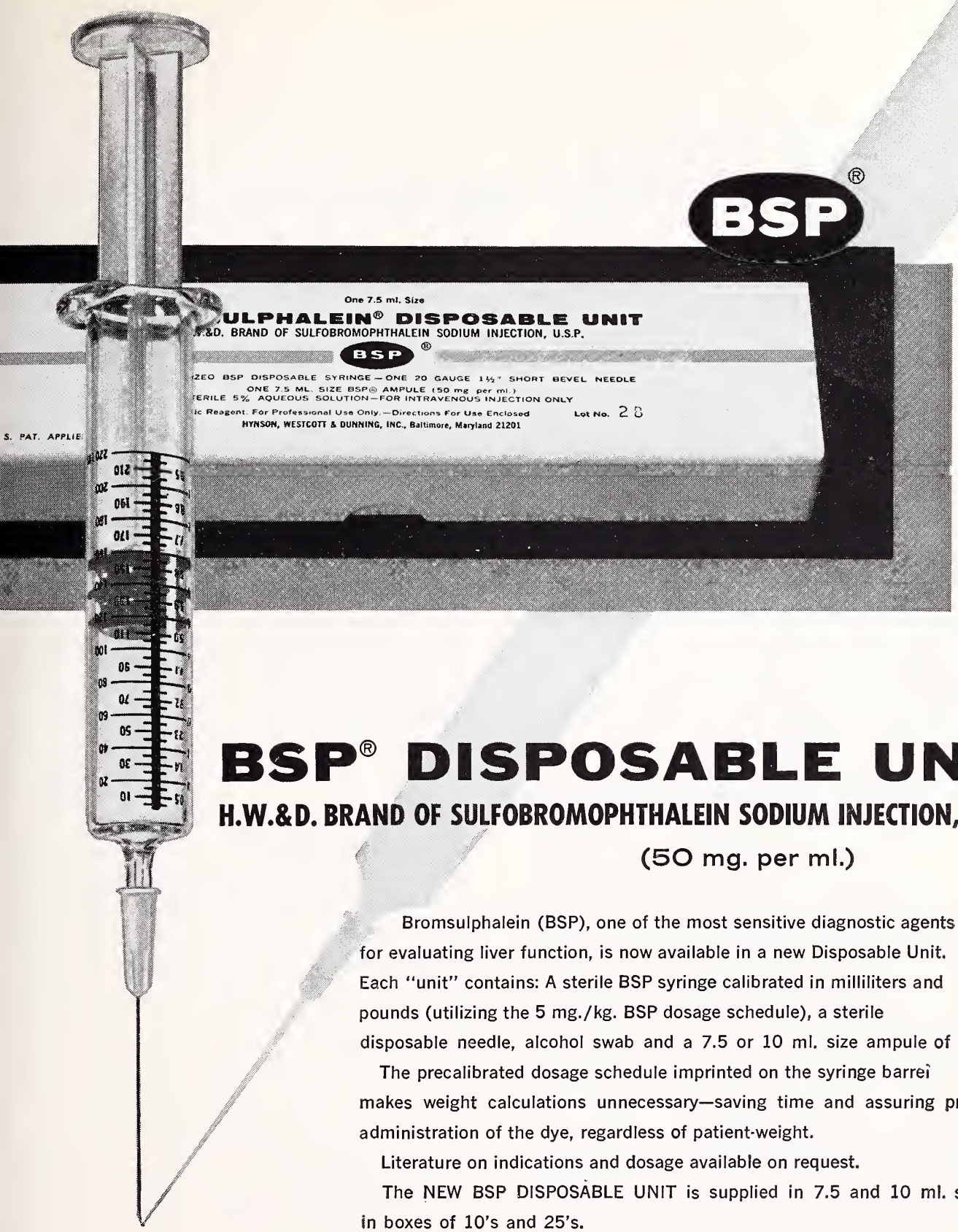
500232

Zentinic® Lilly

Multifactor Hematinic with Vitamins

OCTOBER, 1965


an important contribution to the practice of medicine
CHLOROMYCETIN®
(CHLORAMPHENICOL)
PARKE-DAVIS
PARKE, DAVIS & COMPANY, Detroit, Michigan 48232
Complete information for usage available to physicians upon request.



BSP® DISPOSABLE UNIT

H.W.&D. BRAND OF SULFOBROMOPHTHALEIN SODIUM INJECTION, U.S.P.

(50 mg. per ml.)

Bromsulphalein (BSP), one of the most sensitive diagnostic agents for evaluating liver function, is now available in a new Disposable Unit. Each "unit" contains: A sterile BSP syringe calibrated in milliliters and pounds (utilizing the 5 mg./kg. BSP dosage schedule), a sterile disposable needle, alcohol swab and a 7.5 or 10 ml. size ampule of BSP.

The precalibrated dosage schedule imprinted on the syringe barrel makes weight calculations unnecessary—saving time and assuring proper administration of the dye, regardless of patient-weight.

Literature on indications and dosage available on request.

The NEW BSP DISPOSABLE UNIT is supplied in 7.5 and 10 ml. sizes in boxes of 10's and 25's.

HYNSON, WESTCOTT & DUNNING, INC.

(BSP01)

BALTIMORE, MARYLAND 21201

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV OCTOBER, 1965 No. 10

CONTENTS

And Freely Speak
Philip D. Jordon, Ph.D. 557

SCIENTIFIC ARTICLES

Changing Concepts in Osteoporosis
David D. Hunt, M.D. 563

Renal Arteriography by the Percutaneous Transfemoral Catheter Method
Steven H. Cornell, M.D. 569

Communication Between Physician and Dentist
James H. McLeran, D.D.S., M.S. 579

University of Iowa College of Medicine
Clinical Pathologic Conference 588

EDITORIALS

A "New" Idea 596

Practical Control of Home Medication 596

Safer Automobiles 597

Public Health Meeting in Storm Lake 598

SPECIAL DEPARTMENTS

Coming Meetings 594

President's Page 599

Journal Book Shelf 600

Iowa Association of Medical Assistants 602

In the Public Interest . . . . . facing page 602

The Doctor's Business 603

State Department of Health 605

Woman's Auxiliary News 609

The Month in Washington xxii

Personals xxiv

Deaths xxxviii

MISCELLANEOUS

Our Heritage of Greatness 562

Pity the Unfortunate Patient With Hypertension 578

AMA Clinical Convention in Philadelphia . . . 593

Cystic Fibrosis 593

AMA Campaign Against Rising VD 601

Autopsies 604

The Disease That Never Was 608

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor.....Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D.....Iowa City
Floyd M. Burgeson, M.D.....Des Moines
Daniel A. Glomset, M.D.....Des Moines
Robert N. Larimer, M.D.....Sioux City
Daniel F. Crowley, M.D.....Des Moines

PUBLICATION COMMITTEE

Cecil W. Seibert, M.D.....Waterloo
John H. Sunderbruch, M.D.....Davenport
Kenneth E. Lister, M.D.....Ottumwa
Richard F. Birge, M.D., Secretary.....Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

And Freely Speak

PHILIP D. JORDAN, Ph.D.
Minneapolis, Minnesota

I CHOSE MY TITLE, not because it was so general as to permit me to talk about anything, but because the right to speak freely is a treasure beyond all price, a heritage that today is enjoyed by a minority of the people of the world. Millions of men are gagged, if not by law by fear. The silent ones sit forlornly in homes that are prison cells, deprived of free discussion, of the privilege of argument, of the liberty to dissent.

It is good that we in the United States can disagree, can attack old ideas and new concepts, can debate vigorously, can talk without restraint. It is good that all of us do not think the same way or believe in the same things. A nation's growth should be hammered out on the anvil of public opinion. Change comes about as the result of disputation, as the result of the conflict of ideas expressed by citizens.

I am quite sure that some of you may not agree with me, and I am equally certain that I would disagree with some of you, but the mere fact that we can express differing views is a wonderful thing. As long as this is possible the nation is healthy, is capable of rational change, is a land without chains. It is sad, of course, to see opposing opinions manifest themselves in riots and strikes and bloodshed, yet violence frequently is the child of free speech. Human nature is a precarious and volatile catalyst, the reactions of which are always unpredictable. This is especially true in times like today, when the thought of men everywhere is in revolution.

The United States, like Alice, has gone through the looking glass into a grotesque world that is part fantasy and part reality. Adjustment is difficult because of the lack of recognizable points of reference. Old standards are distrusted, and no satisfactory substitutes are available. The man whose great-grandfather built a railroad through the wilderness without asking approval, now has to get a permit to remodel his front porch. This may be neither the fault of the government nor of political parties, but of the times. Yet I am inclined to think that people get into difficulties when they regard government not only as a political institution but also as a reform school. Actually, the Great Society, viewed from one angle, may not be a leader at all, but a patchwork designed to overhaul chaos already in existence. But patchwork, if it becomes a crazy quilt, also is confusion.

No longer does the American always know what he is or what he stands for. He is caught up and ensnared in a world of contradictions and in a society as fluid as an oil slick. He is frequently ill at ease, and given to saying the right thing in the wrong way. Precepts and concepts upon which past generations rooted their faith and conduct seem unable to provide foundations or security either for government sleuths or for glue-sniffers. The rod of the schoolmaster has been replaced by the hot rod. In 1917 the United States was isolated, and its citizens were readying themselves to fight a world war to which they had given little thought. Today this government is a formidable and political complex with accumulated responsibilities all over the globe. In 1917 the federal government scarcely touched the lives of the people. Today there are few areas it does not influence.

Such a transition is part and parcel not only of a peaceful revolution working its will within this nation, but also one of the greatest wars for economic power and for control of the minds of men that the world has ever witnessed. Symptoms are mistaken for causes, and prescriptions written from imagination rather than from examination.

A wave of self-analysis sweeps the nation. Business becomes touchy about its ethics. Churches reëxamine their role. Art cannot make up its mind whether it exists for its own sake or for the sake of social and economic propaganda. In some instances, it exists for Marx's sake. Major league baseball frets about its national image. The civil rights controversy has divided the country about as much as did slavery more than a century ago, but no black revolt of the nineteenth century ever was as horrible as the actions of white hot-heads during the past few years. It is being said both publicly and privately that the United Nations has lost its usefulness. Adults wonder whether we need more schools or fewer children. We seem not to know how to handle teen-agers, and they don't know how to handle us. The affluent delinquent is

---

Dr. Jordan, a professor of history at the University of Minnesota, gave this address at the banquet session of the Raymond Blank Memorial Hospital Pediatric Conference, in Des Moines, on April 8, 1965.

a greater offender than the boy from a low-income home.

Our cities turn on a rusty axle. It is little wonder that we ask whether New York, Chicago or Los Angeles can be saved, for cities no longer serve their original function. Urban traffic is more of a vexation than a beneficial convenience. We are actually at war while theoretically at peace. We have a Peace Corps and a Kill Corps. The latter is equipped with a finer array of fiendish weapons than the devil himself could devise. When I was graduated from the National Security Forum of the War College of the United States Air Force, I had learned something of chemical warfare. Only recently, however, did the United States Army, through its Directorate of Defense Research and Engineering, announce a new weapon. It is a non-lethal chemical instrument that destroys the kill impulse. The mixture, said an Army spokesman, is designed to "bring happily intoxicated enemy troops into our lines with hands up, humming the STAR-SPANGLED BANNER." Obviously such a weapon would profoundly alter war's technics. It is equally obvious that the weapon would tend to favor rich nations over poor ones, and might be an ideal weapon for a United Nations police force.

Legalists these days are concerned and uncertain. They ask whether liberty of the press, radio and television results in an unfair trial of an individual charged with a major crime. They question the wisdom of present statutes which deal with sex crimes. They wonder why there is decreasing cooperation between citizens and police. They are concerned with both the ethical and the legal implications of wire-tapping. So great has been the criticism of the United States Supreme Court that, last year, Mr. Justice Goldberg thought it necessary to go into print with a defense of the Court. Law-enforcement officers complain bitterly that today new statutes give better protection to criminals than to the law-abiding.

Education, not only here but also abroad, is in a tizzy, in a frenzy of self-examination. Few school systems are happy about their programs, and many are feverishly revising curricula. We don't know whether a child attends school to become adjusted, or to learn how to use the English language. We wonder what today's children will be able to tell their children they had to do without. Schoolbooks are becoming outward manifestations of an inward disgrace. Graduate schools seethe with unrest. Undergraduates revolt. The liberal arts college of yesterday seems unable to recognize its contemporary role. The general-education movement, so popular a handful of years ago, now is recognized for what it was—a counterfeit. The City of Quebec is overhauling its school system. Oxford University is conducting a self-appraisal so searching that the result may well alter the course of all education in Britain. In the United States, we no longer speak of the university, but of the multiversity.

If public education has come under criticism, so has the parochial school. Msgr. John Tracy Ellis, an able historian and a penetrating essayist, says that often the parochial system separates the pupil from his environment. The system seems almost to reach out for the creative, inquisitive child and crush him. "There developed in this country," says Msgr. Ellis, "a tradition which left no room for seeing ourselves through the eyes of others, for the technic of self-criticism, and for trying to learn something about the religious beliefs and practices of others."

APPEARANCES MAY BE WORSE THAN REALITIES

Although as a people we are capable of self-accusation, we have always shied away from distasteful self-indictments, and we are unlikely to find ourselves to blame for all this confusion. This national frailty was noted a century ago. E. L. Godkin, a noted American journalist, said that Americans "soon get accustomed to the evils of their condition, especially if there is no one in particular to blame." Then, he continued, "the inaction or negligence or shortcomings of great numbers assume the appearance of a law of nature." What Godkin was saying, of course, was that although democracy encourages the greatest freedom of speech, it is invulnerable to self-criticism.

A sardonic pessimist might conclude, from this innumeration of Job's boils, that we are only half a mile from hell and approaching our destination rapidly. He might conclude that the best-loved slogans of the American people read: "Virtue is what you make it"; "Leave it to the schools"; "Leave it to psychiatry"; "Free-for-all enterprise"; "The goods—not the good"; and "Good government gives." In other words, he might gather that our greatest national problem is how to stay awake on a full stomach. Such a pessimist would be partially correct. But pessimism springs in part from curiosity, and curiosity is frequently learning's first step.

By and large, Americans have the intelligence to be curious, but they frequently look at the wrong end first. We forget that it is impossible to swindle those who don't trust us. We don't remember that all too frequently we, as a people, are too naive and trusting, and that this is the reason we are swindled so often.

Over a year ago, I spent 10 months in Europe and the Middle East. There, in lands torn and brutalized by cruel war for generations, I watched an impending crisis in civilization. I saw a rebuilt, but divided Europe; peoples fearful of the dreadful past and fearing an uncertain future; new nations rising from the hot ashes of old nations; and everywhere, from the blue Danube to the Rhine, and from the lovely Loire to the sparkling streams of southern, sunny Italy, I heard a single voice—

crying, it is true, in many tongues—asking as if in prayer: "Can hearts be warm when we shiver in the clutch of cold war?" The anguish of the victor matches that of the defeated, for both contestants —winners and losers—know that no matter who won on the battlefield or at the peace table, both lost.

I poked my academic nose into places where perhaps it didn't belong, and talked with professors, students, bankers, brokers, policemen, and the rank and file of unimportant little people, who frequently are the most important of all. I got along with them, in French and German and Italian, and made myself understood in Greece and on the shores of the Dead Sea, and even in Cairo—a dead city where armed sentinels pace in front of police bureaus, fire stations and even hospitals. The Nile—with its picturesque feluccas, whose sails are bright red and Nile green and even shocking yellow—runs through a nation of isolation, a country where men fear to talk, for Egypt is a land where even the pyramids have ears. Yet, there and elsewhere in the Middle East, men chattered behind their hands, always casting furtive glances over their shoulders.

Europeans—Frenchmen, Germans, Belgians, Italians—were more forthright, but the questions put and the views offered were always the same, whether in the Middle East or in Europe. The views blended discouragement with a sense of disaster and dissention. The questions, for the most part, dealt with the problems and issues I put to you earlier—religious questions, queries concerning the role of art in the United States, the delinquency of American youth, the strangling of cities, the integration problem, the place of law in American society, the socialization of medicine.

A German in a Munich beer hall asked: "Is the United States really a Christian nation?" A French student at the Sorbonne wanted to know why we are out of step with DeGaulle, and made rude noises—the way only the French can—as he sneered at the Common Market. A Lebanese law student was convinced that our foreign relations are based on a two-faced policy, and a student in Jordan could not be dissuaded from the quaint but dangerous notion that income from all state sales taxes in the United States is sent to Israel. A distinguished resident of Jerusalem was convinced that the United States has given Jordan no aid. Even as he heaped abuse upon our nation, I could see a long pipe, bought and paid for by the United States, carrying fresh water into Jerusalem. When I mentioned that gift, the Arab contemptuously replied that the Romans, centuries earlier, had done much better. The Romans had placed their pipe underground, so that their water was cool. Now what does one say, in cases like those?

An Italian poet and intellectual said positively that art in the United States is decadent because in America the government stifles initiative. I told him that I don't understand modern art either, but that my failure isn't our government's fault. In Belgium I heard that although the American government professes peace, it really is offensively warlike. No wonder that when one asks the location of an American embassy, the answer is, "Only a stone's throw away." We are accused of doing nothing, or of doing too little, or of doing it the wrong way. In short, we are damned if we do, and damned if we don't.

Yet in one nation after another, armies are equipped with rolling stock and with military hardware manufactured in the United States, and sent abroad either as a gift or under the terms of lend-lease. The Germans, it must be emphasized, are appreciative, for they stand close to the Red Menace, and they comprehend the value of American aid. Generally speaking—and generalizations are always treacherous—the French are selfish, materialistic, rude and bewildered; the Italians hope that another strong man, like Mussolini, may come into power. One hears frequently that Mussolini wasn't such a bad guy until he went wrong. The Greeks and Turks are so confused over Cyprus that anything may develop. The water controversy between Jordan and Israel may lead to dire consequences. Israel cries that it will wither without water, and Jordan shouts that Israel is stealing its water. Fierce tensions exist throughout the Middle East, between Arab and Jew and between Arab and Arab. The No-Man's Land lying desolate between Jordan and Israel is an iron curtain scarcely less sinister than the wall of Berlin. Some Europeans are much more sympathetic with China than with the United States. Viet Nam may yet involve us in a general war. The lend-lease program doesn't seem to have earned us innumerable friends in any area, but we are stuck with it, and to withdraw it would probably prove a costly blunder.

It may be that we shouldn't give a tinker's damn what Europe thinks of us, or what our image is in Europe. Yet at this moment, it appears that we simply cannot afford to make our government more disliked. At the moment, practically all quarters of the world are our first line of defense, and if politics make strange bedfellows, peace makes even stranger ones.

We are misunderstood throughout the world. It is only fair to say, however, that more Europeans are interested in us and in our way of life than we are in them. They are more internationally minded than we are. They speak and read more languages than we do. But right here one thing should be made clear: foreign resentment is directed more against the government of the United States than against the people of the United States. Most Europeans, with the exception of the French, really like Americans. The French, of course, don't even like themselves. An Australian whom I met in Nice told me why he was cutting

his stay in France short. "France," he said, "would be a wonderful country if only it weren't inhabited by the French." French chiseling, French rudeness, French disdain, as you know, have resulted in such a decrease of tourists that the French government itself is concerned, and doubtless a change will be attempted, for a Frenchman is more sensitive than a nineteenth-century Yankee when his purse is involved.

Some left-wing groups, if I judge correctly, may covet another war, but they shun armed conflict because they are afraid of it. Certainly international hates and disputes fester as intensely as ever, but memories of past battles and former losses make for caution. The majority of people hanker for peace. Even those who criticize the United States dream of forsaking their homeland and taking up life in our country. The backlog of applications for visas to the United States is huge. Over and over again, former prisoners of war spoke glowingly of their servitude in the United States. A barber in Bavaria almost forgot to snip in the excitement of telling of his comforts and joys as an American prisoner. A paratrooper in one of Hitler's elite divisions crept and crouched and ran for days, he said, so that he might elude French and British patrols and be captured by Americans. He said what they all say: "Amerika ist prima!" The United States, despite its shortcomings, real or fancied, is the Mecca of today's world. It remains, as it was in the nineteenth century, a symbol of the good life, of security. "Dearie," an Englishwoman told me on the fields of Flanders, "if ever I win the lottery, I'm off for the States."

Why, then, do so many Europeans criticize the United States so vigorously and still wish desperately to come here? "We criticize you," said a professor in Antwerp, "because we are jealous of you. The entire world is jealous of the way you Americans live. You have central heating and electric washing machines and automobiles. You live in houses, not apartments. You spend freely, and you always are giving food and money. We are on the receiving end, and even though we need what you send us, we hate you for it. I guess that's only human nature."

He went on, not sure how I'd take all this, "Too many Europeans think that Americans don't work for their money, and that all Americans are rich." He sighed self-consciously. "That," he said, "is why a shopkeeper's price goes up when an American walks in. That's why you'll be 'taken' too many times. I've been to your country, and I know different. I know you do work hard, and that all of you aren't wealthy, but the trouble is that most of you have more than most of us over here. As I said, we're jealous of you, and we fear your strength." All this might be condensed into: we are loved for what we have and hated for what we give. Shakespeare's green-eyed monster once again mocks the meat it feeds on. We are like the bride who realizes she has become a wife when she is whistled *for,* instead of *at.*

Although left-wing groups—and some on the right, too—fear the might of Uncle Sam, and suspect that the United States is out to make the world over in the image of its own confusion, they don't hesitate—whether radical or conservative—to imitate and ape us. In a sense, we are conquerers. We are conquering insidiously. We are succeeding because American manufactured goods and American tastes and American customs are more appealing to the German and the Greek and the Italian than are his own products and his own ways. In this conflict, plastic becomes more potent than gunpowder. European and Middle Eastern markets are piled high with plastic buckets, plastic bibs, plastic toys, plastic overshoes and plastic purses. Native arts and crafts retreat before American patents. Home-fired breads fall before the European subsidiaries of the National Biscuit Company. An American-owned and operated refrigerator company in Luxembourg cannot meet local demand.

American oil engineers, dredging off the coast of Holland, introduce their customs and tastes to the Dutch. American cosmetics, curlers, hair dyes, shaving lotions are stocked generally. A large percentage of toys displayed before Christmas in an elegant Paris department store are marked "Made in U. S. A." Foreign women clamor for American-made clothes. Despite the fact that Rome is one of the world's largest producers of moving pictures, Italians prefer American movies. Television, although owned by relatively few persons, shows American tapes with foreign language dubbed in. Taste among foreigners for American bourbon has reached such a height that American distillers are shipping it in bulk to Germany to be bottled there. And it goes without saying that American automobiles are preferred over European cars by those who can afford them. Even the affluent German, well supplied with mink, mistress and Mercedes, wants an American car.

Books and magazines printed in the United States are read avidly. The American paperback has taken Europe by storm. Traveling exhibits of American art draw crowds. When the University of Maryland Glee Club sang in Athens, the auditorium was jammed. Graduate students in all disciplines dream of continuing work in the United States, and if they are in the sciences, of earning their doctorates from American universities. More physicians come to the United States for postgraduate study than go to any other country. School youngsters invariably elect English as one among the two or three foreign languages they must master. American English—not English English—is usually their first choice. A Dutch stockbroker told me that the Holland bourse had

adopted the practices and rules of the New York Stock Exchange.

This is not all. European capital for investment in the United States mounts. Forty per cent of the stock of Libby, the food packer, now is owned by Italians; a British corporation, with plants in Tennessee and South Carolina, currently manufactures one fifth of all newsprint made in the United States; 45 per cent of the Pan American Building in New York City was financed by British investors; Italy's largest land developer is financing a $60 million complex of apartments in Washington, D. C.; and the Shell Oil Company is owned by joint British-Dutch companies. Few American urchins, slobbering Good Humor bars down their tidy fronts, ever suspect that they are patronizing an English-owned company, Lipton Tea, which is a subsidiary of the giant Unilever.

American troops, throughout two world wars, did much to reshape the Old World, just as during the second of them and the Korean aftermath, they began to westernize the Orient. Soldiers, for example, introduced the Christmas tree to Italy, and Italians who liked the custom but didn't always quite get the idea, festooned their evergreens with everything from colored balloons to pink panties—thus providing an insight into the complicated Italian mentality and sense of values.

When America was young and only an extension of European thought and politics, culture flowed from the Old World to the New. Today, the situation is in large measure reversed. We are the senders, the transmitters, the pattern for emulation. We set styles as never before. Europe got the idea of the supermarket from us, of the roadside hot-dog stand from us, of the drive-in movie from us, of the credit card from us, of the motel from us, and of frozen food from us.

I am unwilling to judge these typically American gimmicks as either good or bad, nor do I care to label them as hallmarks of progress. I am saying only that foreigners consider them of sufficient worth to be copied. The feeling abroad is that modernity is a synonym for the United States. Intellectuals scoff at this view and reject it as untrue oversimplification. Nationalists with an anti-American bias say that our affluent society is sickly, charge that the acceptance of American products weakens local arts and crafts, and warn that the United States is wholly selfish and committed to a sneaky policy of domination and mastery—that we preach the dignity of man and practice deception. Liberals say that no nation, even during expansion and colonization, ever treated natives worse than we treat minority groups and races. Foreign opinion is apt to point out that the great American democratic experiment has rejected its republicanism as expressed by the colonial founding fathers for a centrally controlled welfare state based on socialistic principles. Such contrasting and ambivalent opinions make it difficult indeed for Americans and foreigners to engage in calm discussions.

Europeans pestered me with one major question: What is the United States planning to do? That query almost invariably was followed by another: Do you really think the state can plan and can attain the ideal society? The barb, here, is barely concealed. Foreigners are really asking whether the American people are ready to permit the federal government to plan their lives for them on the basis of a blueprint drawn in Washington. A political scientist at the Sorbonne wondered what the difference was between political authoritarianism and social totalitarianism. He pointed out the differences among President Hoover's report on social trends in 1933, President Eisenhower's *Goals for Americans* in 1960, and the proposals of Presidents Kennedy and Johnson.

The French political scientist was not talking about whether Republican Party social planning is any different or any better or any worse than Democratic Party planning. He was trying to find out whether it were true that the United States has reached not only a plateau of one-party rule, but a philosophical plateau where the argument, as Eric Severeid put it, "will no longer concern whether or not the federal government should do the things the 'Great Society's' program calls for," but will merely concern how these things shall be accomplished.

You might be interested in a letter I received from a Greek scholar. "The greatest weakness of the Great Society," he wrote, "is that it can never be great unless the government instills in itself a great morality." He pointed out that evidence seems to indicate that congressional seats can be bought, that private interests purchase special favors, and that "there are more efforts to get around than to obey the Federal Corrupt Practices Act which governs elections." The letter enclosed a clipping from THE NEW YORK TIMES, and every word was underlined. THE TIMES had commented on the fact that a congressman from New York was reputed to have spent nearly $200,000—much more than the law permitted—to win his seat. The congressman maintained that he had stayed strictly within the letter of the law. THE TIMES had commented: "Undoubtedly he [the congressman] did. But what is legal can still be improper by normal standards of public conduct. The very future of this democracy depends upon some rough equality of access to public office, irrespective of financial backing." The Greek felt, and I don't entirely disagree, that all this boils down to the fact that in the United States, if you are a rich man, you can easily finance a campaign to win a seat in Congress. If you are a poor man,

you must depend on contributions from others, and often the contributors exact their pound of flesh by demanding special favors.

Irving Kristol, one of this nation's leading publishers, wrote last January that the relations between the government and the people are becoming an amiable process of mutual corruption. "The people," he wrote, "see the government as a mechanism for the satisfaction of their desires and appetites; the government inches delicately along the line of least resistance, sees the people as a series of blocs to be appeased, cajoled or stimulated, as the occasion prescribes."

Curiously enough, the attention of both foreigners and Americans centers upon the growing role of the central government. Little notice is paid to what is happening in the several states. Few persons realize that federal expenditures are leveling off, and that state and local spending is skyrocketing. During the last decade the growth rate of state and local spending doubled the growth rate of the national income. Education, roads, health and welfare took the biggest bite. Taxes demanded by all governments—federal, state and local—totaled 25 per cent of the gross national product in 1962. However, the share taken by state and local governments continues to rise, and the federal share —believe it or not—continues to decline. I mention this handful of statistics only because both foreigners and some Americans generally concentrate attention upon spending programs of the central government and lose sight of state spending. We have forgotten that prudence is spending what you have left after saving, instead of saving what you have left after spending.

We do live in an age of anxiety—in a transitional trauma sandwiched between a period of certainty and a speculative future, between what we know and what we are unsure of, between old ways that are gone forever and new ways not yet clearly discernible. Neither the palm-reader nor the horoscope artist can foretell in detail the pattern of life which is to come and which will alter both the face and the mind of America. We cannot turn back to the alleged safety and security of the Gay Nineties or of earlier days of exuberance. To do so would be national suicide. We dare not lose confidence in a form of government which, despite its defects, has offered security and plenty not only to those born within its confines but also to the peoples of the rest of the world. We are far from decadent, and American political thought is not sterile. If we are to adjust to the coming world, we dare not assume that all new economic, political and social thought, in whole or in part, is a placebo. Yet we must beware that a Librium placidity is not substituted for Liberty's self-determination. We can't afford to pay ourselves payola.

Our Heritage of Greatness

MR. J. EDGAR HOOVER

Self-indulgence—the principle of pleasure before duty—is undermining those attributes of personal responsibility and self-discipline which are essential to our national survival.

Disrespect for authority and specifically for the law-enforcement officer can be measured to a great extent by the number of assaults on police acting in the line of duty. The rate of these assaults continues to climb yearly, with about 11 of every 100 police officers having been the victims of assault during the past year. All of this contributes to moral decay, a tragic national malady.

These dangerous elements are at work in America today, subverting our traditional democratic processes and undermining respect for law and order. In all too many instances, they have been aided by a body politic incredibly indifferent to the demands of civic responsibility.

Today there are too many signs that Americans, as individuals, are pursuing the deadline course of irresponsibility which has led to the downfall of other nations and other cultures throughout the history of mankind. I refer particularly to those halfway Americans who eagerly avail themselves of every right and privilege which our country guarantees its inhabitants, while blatantly refusing to accept the duties that life in a free society necessarily entails. I refer also to those modern-day Rip Van Winkles who tolerate abuses of our democratic institutions and corrosive down-grading of America's high ideals by dangerous enemies of freedom.

Last year, 2¼ million serious offenses were reported to police departments throughout the nation. That was the largest number ever recorded. But preliminary statistics already available indicate that the crime total in 1964 will far surpass 2½ million.

Crime is increasing five times as fast as our expanding population. Vast sections of many American towns and cities have become virtual jungles of terror and lawlessness. Growing numbers of children are living in an atmosphere rife with defiance, violence and cynicism. This polluted atmosphere can be measured in terms of police reports which show that nearly two-thirds of the arrests for automobile thefts, one half of the burglaries and larcenies, and one fourth of the robberies throughout the country involve persons under 18 years old.

Challenge, not compromise; bravery, not cowardice; strength, not mediocrity—these noble qualities illuminate the pages of our nation's history. We must revitalize the miracle of faith that keeps men free. Therein lies our heritage of greatness.

Scientific Articles

Changing Concepts in Osteoporosis

DAVID D. HUNT, M.D.
Iowa City

Osteoporosis is by far the most common metabolic disorder of bone in this country.[1] This disorder is of considerable clinical importance because in its advanced stage the patient is predisposed to fractures, particularly of the spinal column and hips. The purpose of this paper is to review recent research studies in primary osteoporosis, and to set forth certain guidelines for its diagnosis and treatment.

Definition. In osteoporosis the amount of bone tissue is decreased. There is no reduction in the degree of mineralization, though there is in osteomalacia. In osteoporotic bone, the matrix-to-mineral ratio is unchanged, and the ash content is the same as in normal bone,[2] whereas in osteomalacia there is an increase in the ratio of uncalcified osteoid to mineral content. Osteoporosis can be generalized or can occur locally, and it may be seen in many conditions (Table 1). This paper will discuss only primary osteoporosis, which is the same as senile and postmenopausal osteoporosis.

ETIOLOGY

A. *Changes in bone dynamics.* The integrity of the skeleton depends on a dynamic balance between two continuous and opposed activities—bone formation and bone destruction. A progressive reduction in the amount of skeletal tissue such as occurs in osteoporosis may result from decreased bone formation, from increased bone destruction or from a combination of the two. Investigators have not agreed on which process is operative in primary osteoporosis.

Albright[3] gave us the first nosologic and etiologic description of osteoporosis in 1940, and until recently his concepts have had a dominating influence in this field. However, the classical definition of osteoporosis by Albright as that form of bone disease in which the disturbance consists of a decreased production of osteoid by the osteoblasts[4] now appears to have been in error. Albright thought that this deficiency of matrix manufacture in osteoporosis was caused by gonadal hormone inbalance. In support of his theory he pointed to the severe osteoporosis seen in Cushing's disease, the osteoporosis that was regularly seen in hypo-

TABLE I

CAUSES OF OSTEOPOROSIS

A. Endocrine Disorders	
	Cushing's syndrome and corticosteroid therapy
	Acromegaly
	Thyrotoxicosis
	Diabetes Mellitus
	Hypogonadism
	Hyperparathyroidism
B. Vitamin and Dietary Disorders	
	Starvation, prolonged calcium and protein deprivation
	Vitamin C deficiency
	Hypervitaminosis A
	Achlorhydria
C. Physical Factors	
	Immobilization
	Inflammation, Injury
D. Unknown	
	Primary (senile, postmenopausal)
	"Idiopathic" (similar to primary but occurring in young adults)
	Congenital—osteogenesis imperfecta

Dr. Hunt is a resident in the Department of Orthopedic Surgery at the U. of I. College of Medicine, and he made this presentation, in part, to the Residents' Orthopedic Pathology Seminar, in December, 1964.

gonadism, and the high percentage of postmenopausal women in his group of osteoporotic patients. Albright did not use direct measurements of bone accretion. His conclusions were drawn deductively from the known observation that estrogens stimulate endosteal bone formation in the pigeon, and from metabolic studies of calcium excretion in the osteoporotic patients whom he had treated with sex hormones.

The primary importance of dietary-calcium deficiency in the etiology of osteoporosis was stressed by Nordin[5] and Lutwak and Whedon.[6] More recently, Spencer, *et al.*[7] have suggested that calcium deficiency resulting from decreased ability to absorb calcium from the intestine may be important in primary osteoporosis. Nordin notes that most investigators had assumed with Albright that because vitamin-D deficiency produces rickets by interfering with calcium absorption, calcium deficiency must therefore have the same effect. However, Nordin was able to produce osteoporosis, not osteomalacia, in animals by means of low-calcium diets. Nordin found that in the adult human of either sex there was a wide range in the dietary calcium required to sustain calcium balance, with considerable individual variations (2-19 milligrams per kilogram per day). Although the average intake of calcium in the Western World is about the same as the average requirement, many surveys have disclosed that large numbers of people live on much lower intakes. Unless the individuals with high requirements happen to be those on high intakes, and *vice versa,* it appears likely that many people are in negative calcium balance.[2] The evidence concerning adaptation of the individual to low dietary calcium is conflicting. Reduction in dietary calcium uniformly produces negative calcium balance initially, and many people are unable to adapt to a low calcium intake and will remain in negative calcium balance.[2]

Jowsey[8, 9] and others have done much valuable work on osteoporosis by means of microradiography and the tetracycline labelling of bone. Jowsey has observed that bone formation and resorption takes place only on bone surfaces. She has demonstrated that the microscopic surface area of bone gradually increases with age, and that there is a gradual increase in the amount of resorption with little variation in the amount of bone formation. In osteoporotic bone, she has documented a greater than normal rate of resorption. Her work has given the strongest support to the evolving concept of osteoporosis as a disorder characterized by an increase in the rate of bone resorption. Direct observation through microscopic bone-sampling technics produces the most dependable results in the investigation of osteoporosis. Technics which utilize radioisotopes must, at best, be indirect in their assessment, and it is now known that radioactive calcium, strontium and tetracyclines can be bound to metabolically inactive bone,[9] making accurate calculations of bone turnover rates difficult to achieve by these means.

B. *Changes in bone structure.* The mineral salts, collagen and water make up over 96 per cent of bone. The acid mucopolysaccharides found in the ground substance, of which chondroitin sulfate is one, make up less than one per cent of bone.[10] No change has been found in the mineral component of bone in osteoporosis. However, alterations of the collagen structure in osteoporotic bone[11] and an increased daily excretion of mucopolysaccharides in the urine of osteoporotic patients have been recorded.[12] Therefore, although the major derangement in primary osteoporosis now appears to be in the dynamics of calcium metabolism, and is reflected in an increased rate of bone resorption, there also is evidence that the bone matrix is not normal in this disorder.

ESTABLISHING THE DIAGNOSIS OF OSTEOPOROSIS

Clinically, the osteoporotic patient is likely to be a woman (ratio 4:1) and is usually over 50 years of age. Vertebral-body collapse and hip fractures are the most common complications of the decreased bone density. Frequently the patient will have experienced a loss of several centimeters in height over the years. The osteoporotic patient usually has a poor intake of calcium and protein, although careful questioning is often necessary in obtaining this information. The average patient tends to be inactive and sedentary.

Osteoporosis cannot be established by means of a single diagnostic test. An adequate diagnostic workup is particularly desirable in patients who have vertebral compression fractures and who are under the age of 55, for the likelihood that osteoporosis has caused the lesion in this group is only about one in 10.[13] Basically, the diagnosis is made by excluding other diseases with which osteoporosis can be confused, such as osteomalacia,

TABLE 2

DIAGNOSTIC TESTS USEFUL IN OSTEOPOROSIS

X-ray Examination
Thoracic and lumbar views if initial complaint is backache
"Abbreviated skeletal" views (see text) if diagnosis is uncertain after initial x-rays
Blood Tests
Complete blood count
Total protein and A/G ratio
Serum Ca, P and alkaline P'tase
Urine Tests
Urinary Ca and N determined on a 24 hour collection
Bone Biopsy
Only rarely necessary in differentiating severe osteoporosis from osteomalacia, multiple myeloma, etc.
Material often available at time of open reduction for hip fracture

multiple myeloma, hyperparathyroidism, and metastatic neoplastic disease.[14] In Cushing's disease, acromegaly and thyrotoxicosis, ordinarily, the associated signs and symptoms will suggest the correct diagnosis. Only rarely will such conditions as Paget's disease and infection of bone be difficult to distinguish from osteoporosis (Table 2).

X-ray examination. Back pain is the most common clinical complaint in osteoporosis, and x-rays of the appropriate segment of the spine should be taken. If the degree of osteoporosis is severe and if the problem of differential diagnosis arises, additional views should consist of an "abbreviated skeleton"[15]—postero-anterior views of the chest and renal areas, pelvis, knees and hands, and lateral views of the skull and lumbar spine. The early roentgenographic findings in osteoporosis are indistinguishable from those of early osteomalacia. One cannot rely upon the presence of the lamina dura in osteoporosis and its regular absence in osteomalacia.[15] There is no current roentgen method that detects osteoporosis until at least 30 per cent of the bone has been resorbed.

Typical x-ray changes occur in the more advanced stages. The trabecular pattern of the vertebral bodies appears atrophic on x-ray, but the vertical striations are relatively prominent (Figure 1). Thinning and weakening of the subchondral plates permit the development of a biconcave appearance of the vertebral bodies, but one rarely sees biconcave deformities of the entire spinal column such as are typical of the "codfish" spine in osteomalacia. The reason is that irregular vertebral-body collapse occurs in osteoporosis, most frequently in the lower thoracic and upper lumbar segments (Figure 2).

If the number of compression fractures is less than three, malignant disease should be suspected until it is disproved.[13] A rounded kyphosis is often seen in both osteoporosis and osteomalacia. Minimal hypertrophic degenerative changes in the spinal column and an increased incidence of calcification in the abdominal aorta have been noted in osteoporosis, but these changes are not regular features of the disease.

Laboratory tests. The complete blood count and the serum calcium, phosphorus, and alkaline phosphatase determinations are normal in osteoporosis. In severe cases the serum albumin may be somewhat lowered and the globulin slightly above normal, as is commonly observed in any chronic debility.[16] In both osteomalacia and hyperparathyroidism the serum phosphorus is near or below 3 mg. per cent, and in both conditions the alkaline phosphatase is almost always markedly elevated. Though the serum calcium may be normal in both disorders, it is usually near or below 10 mg. per cent in osteomalacia and greater than 11.5 mg. per cent in hyperparathyroidism.[16] Although nonspecific, the sedimentation rate may be helpful if the

Figure 1. A relative prominence of the vertical striations is one of the earliest radiographic signs in primary osteoporosis. The atrophy involves all vertebral bone, but the trabeculae in the direction of weightbearing stress are less porotic. The lowest vertebral body in this thoracic spine has collapsed (arrow).

Figure 2. This x-ray shows the typical irregular collapse of vertebral bodies seen in severe osteoporosis. Biconcave deformities of the porotic vertebral bodies are also apparent. Note the absence of degenerative changes in the spine and the presence of aortic calcification.

possibility of infection exists, and it should be obtained if fever has been present.

The urinary calcium and nitrogen should be determined from a 24-hour collection. The patient can easily collect such a sample at home. The calcium excretion may be normal, slightly increased or decreased in osteoporosis, but it will be definitely elevated in hyperparathyroidism, in multiple myeloma, and in any disease in which rapid destruction of bone occurs. If the 24-hour urinary calcium excretion is greater than 350 mg. in a woman and 375 mg. in a man of average proportions, the nomogram devised by Knapp[17] should be consulted. Further investigation and observation are in order, for excretion levels above these figures are not usually seen in primary osteoporosis.[16]

Determination of the urinary nitrogen is useful because a total nitrogen of 10 Gm. or less in the 24-hour specimen indicates that the patient is consuming 60 Gm. or less of dietary protein per day.[16]

Tissue diagnosis. Diagnostic biopsy is rarely necessary in osteoporosis, but material will often be available at the time of open reduction after fracture. This tissue usually confirms what was already suspected, but histologic examination should be carried out in doubtful cases because pathologic fractures secondary to neoplasms can be superimposed on a severely osteoporotic skeleton.

COMMENTS ON THE TREATMENT OF OSTEOPOROSIS

The problem of effective therapy in osteoporosis has not been solved. Unfortunately, no therapeutic agent has been found that produces a reversal of the process of osteoporosis that can be seen on x-rays. Part of the difficulty in evaluating therapeutic agents is that since osteoporosis progresses gradually, many years are necessary to produce the changes that can be seen in roentgenograms. Many drugs have been used in the treatment of osteoporosis, but little is known of the therapeutic value, if any, of many of those agents. In the treatment of few other disorders does the gibe by Voltaire[14] seem so appropriate: "A physician is one who pours drugs of which he knows little into a body of which he knows less."

The two therapeutic approaches used most often in osteoporosis are sex steroid therapy and, in recent years, increases in calcium intake. Sodium fluoride, strontium, albumin, and desoxyribonucleic acid have been used in the treatment of primary osteoporosis, but the effectiveness of these agents is still in the preliminary stages of evaluation.

The worth of sex steroids in the treatment of osteoporosis has long been controversial. Albright found that estrogens and androgens reversed the negative calcium balance in most osteoporotic patients, and that symptomatic improvement occurred. But he was never able to demonstrate radiographic improvement in his patients, and he finally concluded that sex steroids could arrest the progress of osteoporosis but could not reverse it. Although Albright was able to produce short-term positive calcium balance in his osteoporotic patients by means of hormonal therapy, Lutwak and Whedon[18] have pointed out the lack of follow-up balance studies to demonstrate the duration of the mineral-retaining effects of gonadal steroids after years of therapy. An increased incidence of osteoporosis in postmenopausal women is hardly evidence enough to establish hormonal imbalance as the cause. The bones of women are less dense than those of men throughout life,[19] and it is impossible to demonstrate greater hormonal imbalance in osteoporotic women than in non-osteoporotic ones. Larson and Stearns[16] found the urinary 17-ketosteroid excretion to be no different in osteoporotic and in non-osteoporotic patients. Donaldson and Nassim[20] found no evidence that osteoporosis was precipitated by artificial menopause. Many investigators have theorized that estrogens are effective in the treatment of osteoporosis because of the rapid and effective pain relief that accompanies their administration, but Soloman, *et al.*[21] showed in a doubleblind study, that the symptomatic relief of gonadal steroids in osteoporosis was largely a

placebo effect, and that androgens actually increased the symptoms.

The side effects of sex steroids include sodium retention with edema formation in some patients; uterine and breast stimulation necessitating cyclic administration to permit endometrial sloughing; virilizing effects; and stimulation of the libido. These side effects are often quite disconcerting to elderly patients. Concern over the carcinogenic effect of estrogens has not been confirmed.[22]

Dietary supplementation of calcium induces a positive calcium balance in most osteoporotic patients, and this retention of calcium can be sustained over long periods of time.[23] This sustained positive calcium balance on high calcium intake is apparent with or without hormonal therapy.[24] Additional improvement of the metabolic balance by the addition of vitamin D has been observed.[18] There is no evidence that adding sex steroids will induce a greater retention of calcium in most patients. No objective x-ray improvement has been demonstrated following treatment with supplemental calcium, although sustained symptomatic improvement has been noted by several investigators. There have been no reported side effects from supplemental dietary calcium. There have been reports of complications secondary to hypercalcuria following excessive doses of vitamin D in the treatment of osteoporosis.[1]

TABLE 3

THERAPEUTIC REGIMEN FOR PRIMARY OSTEOPOROSIS

Symptoms Related to Acute Fracture
- Vertebral Body Collapse
  - bedrest and analgesics during acute phase
  - normal activity as soon as possible, often aided by temporary use of corset or brace
- Hip and Other Fractures
  - fracture stabilization and early mobilization

Prophylactic and Long-term Treatment
- Dietary Instruction*
  - Ca—one quart whole milk/day with 1 teaspoon skim milk added/glass (1250 mg total calcium)
  - protein—seventy Gm/day
  - vitamin D—5000 u daily for three months, then 1000 daily
- Activity Program—individualized (see text)
- Follow-up Care
  - determination of urinary Ca and N on a 24 hr. collection 3 months after onset of therapy, then annually*

* After Stearns, G.: personal communication

Table 3 presents a therapeutic approach to primary osteoporosis which does not include androgens or estrogens. I don't mean to imply that endocrine factors play no part in primary osteo-

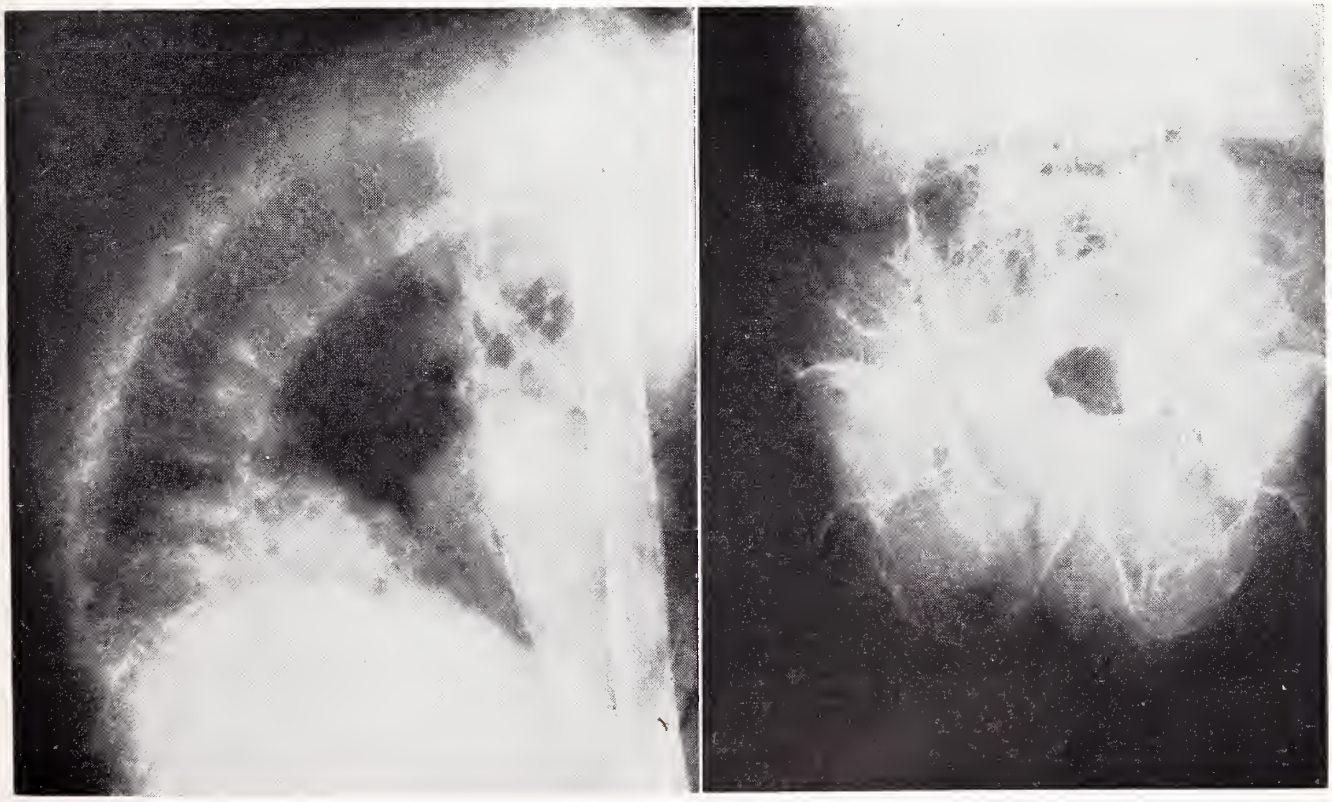


Figure 3. This patient's initial complaint was thoracic pain. The x-ray appearance of the spine is typical of advanced osteoporosis. Had the pelvic view (right) not been taken, the diagnosis of multiple myeloma with extensive bony involvement would have been missed.

porosis. However, there is inadequate evidence that added benefit of sex hormones in conjunction with the program recommended in this paper would compensate for their side effects.[16, 26]

By taking ample time to explain the dietary program, the physician can make the patient aware of its importance. In addition to the calcium given as milk, the patient should be encouraged to eat milk products such as cheese and ice cream. Rarely, one encounters a patient who does not tolerate milk. Emphasis must then be placed on compatible milk products. If necessary, calcium wafers may be used to maintain the desired calcium intake. The dietary protein should approximate 70 Gm. per day and should include at least one serving of meat daily. An adequate total caloric intake is especially important for the thin osteoporotic patient. The dose of vitamin D is within the safe range. Aside from the likelihood of improving their intestinal absorption of calcium with this medication, certain patients will derive a placebo effect from taking the pills, and need have no fear of side effects or complications if they follow the dosage schedule.

One should encourage as much activity as is compatible with the patient's physical condition. Pleasant activities particularly should be stressed, for elderly patients do not adhere to calisthenic programs. In the treatment of acute compression fractures, complete bedrest on a firm mattress is recommended. Care should be taken not to overmedicate elderly patients. A patient with a compression fracture need not and should be kept in bed until all pain has subsided. Aching, deep "bone" pain may persist for a prolonged time. The best treatment for the patient is mobilization with the aid of a well-fitting corset as soon as acute pain from the fracture has abated.[27] Often a light, pick-up walker is helpful early, and later a cane can be used.

Follow up care should include determination of the urinary calcium and nitrogen on a 24-hour sample collected at home three months after onset of therapy, and then annually. From this data a useful estimate of the calcium balance can be obtained.[16] A continuing chart of the urinary calcium excretion pattern is of considerable value in the management of any osteoporotic patient. The nitrogen excretion will serve as a simple check on whether or not the patient is consuming adequate protein.

SUMMARY

Recent research in the field of primary osteoporosis has been cited. The evolving concept of osteoporosis as a disease of increased bone resorption and the controversial aspects of treatment have been discussed. A diagnostic approach has been presented. It is useful in differentiating severe cases of osteoporosis from other disorders of bone.

Although no treatment has been proved capable of reversing osteoporosis, a practical therapeutic regimen has been outlined that can be expected to prevent further progress of the disorder, and to provide symptomatic relief in most patients without harmful side effects.

ACKNOWLEDGEMENTS

The author is grateful to Mr. F. W. Kent for the photographic reproductions.

REFERENCES

1. Gwinup, G.: Hypercalcemia as complication of vitamin D therapy in post-menopausal osteoporosis. J. Clin. Endocr., **21**:101-103, (Jan.) 1961.
2. Nordin, B. E. C.: Osteomalacia, osteoporosis and calcium deficiency. Clin. Orthop., **17**:235-258, (summer) 1960.
3. Albright, F., Bloomberg, E., and Smith, P. H.: Postmenopausal osteoporosis. Tr. A. Am. Physicians, **55**:298-305, 1940.
4. Albright, F.: Osteoporosis. Ann. Int. Med., **27**:861-882, (Dec.) 1947.
5. Nordin, B. E. C.: Pathogenesis of osteoporosis. Lancet, **1**:1011-1015, (May 13) 1961.
6. Lutwak, L., and Whedon, G.: Osteoporosis—disorder of mineral metabolism. Borden Rev. Nutr. Res., **23**:45-66, (Oct.-Dec.) 1962.
7. Spencer, H., Menczel, J., Lewin, I., and Samachson, J.: Absorption of calcium in osteoporosis. Am. J. Med., **37**:223-234, (Aug.) 1964.
8. Jowsey, J.: Age changes in human bone. Clin. Orthop., **17**:210-218, (summer) 1960.
9. Jowsey, J.: "Microradiography of Bone Resorption." In: Sognannes, R. F., ed.: Mechanisms of Hard Tissue Destruction, Washington, D. C., American Association for the Advancement of Science, 1963, pp. 447-469.
10. Eastoe, J. E.: "The Organic Matrix of Bone." In: Bourne, G. H., ed.: The Biochemistry and Physiology of Bone. New York, Academic Press, 1956, p. 88.
11. Little, K., Kelly, M., and Courts, A.: Studies on bone matrix in normal and osteoporotic bone. Brit. J. Bone & Joint Surg., **44**:503-519, (Aug.) 1962.
12. Casuccio, C.: Concerning osteoporosis. Brit. J. Bone & Joint Surg., **44**:453-463, (Aug.) 1962.
13. Nicholas, J. A., and Wilson, P. D.: Osteoporosis of aged spine. Clin. Orthop., **26**:19-33, 1963.
14. Cooke, A. M.: Osteoporosis. Lancet, **1**:929-937, (May 7) 1955.
15. Rose, G.: Radiological diagnosis of osteoporosis, osteomalacia and hyperparathyroidism. Clin. Radiol., **15**:73-83, (Jan.) 1964.
16. Stearns, G.: Personal communication.
17. Knapp, E. L.: Factors influencing urinary excretion of calcium in normal persons. J. Clin. Investigation, **26**:182-202, (March) 1947.
18. Lutwak, L. and Whedon, G. D.: Osteoporosis. DM, 1-39, (April) 1963.
19. Trotter, M., Broman, G. E. and Peterson, R. R.: Densities of bones of white and Negro skeletons. Amer. J. Bone Surg., **42**:50-58, (Jan.) 1960.
20. Donaldson, I. A. and Nassim, J. R.: Artificial menopause with particular reference to occurrence of spinal porosis. Brit. M. J., **1**:1228-1230, (May 29) 1954.
21. Solomon, G. F., Dickerson, W. J. and Eisenberg, E.: Psychologic and osteometabolic responses to sex hormones in elderly osteoporotic women. Geriatrics, **15**:46-60, (Jan.) 1960.
22. Gordon, G. S.: Osteoporosis—diagnosis and treatment. Texas J. Med., **57**:740-747, (Sept.) 1961.
23. Schwartz, E., Chokas, W. V. and Panariello, V. A.: Metabolic balance studies of high calcium intake in osteoporosis. Amer. J. Med., **36**:233-249, (Feb.) 1964.
24. Harrison, M., Fraser, R. and Mullen, B.: Calcium metabolism in osteoporosis; acute and long-term responses to increased calcium intake, Lancet, **1**:1015-1019, (May 13) 1961.
25. Stearns, G.: Unpublished data.
26. Hatcher, C. H.: Personal communication.
27. Larson, C. B.: Personal communication.

Renal Arteriography by the Percutaneous Transfemoral Catheter Method

STEVEN H. CORNELL, M.D.
Iowa City

During a one year period (November 1, 1963-October 30, 1964) 144 percutaneous transfemoral renal arteriograms were done at the University of Iowa Hospitals. Since the initial report by Seldinger,[9] the percutaneous method of arteriography has steadily gained in acceptance throughout the world, and has largely eliminated the need for open arteriotomy except in selected cases. In contradistinction to translumbar aortography, it is possible with the catheter method to visualize selected portions of the vascular tree. This results in greatly improved detail of small arterial branches in the areas of interest. Even with a non-selective injection into the abdominal aorta, vascular detail is usually better than with the translumbar method, because the catheter can be positioned in such a way that the bolus of contrast material is directed into specific vessels.

TECHNIC

The patient is premedicated with a barbiturate and a narcotic, approximately one hour prior to the procedure. The inguinal area is shaved, cleaned, swabbed with a germicidal solution and draped with sterile towels. The femoral artery is palpated just distal to the inguinal ligament, and the skin and subcutaneous tissues are infiltrated with a local anesthetic. A nick is made in the skin, and the subcutaneous tissues are spread with a hemostat. The femoral artery is punctured with a special needle-cannula. When there is a pulsating flow of blood, a flexible guide wire is inserted through the needle into the vessel, and the needle is removed. At this point, it is of the greatest importance to apply firm pressure over the artery to prevent bleeding around the small guide wire. A catheter with a tip tapered to fit snugly over the guide wire is threaded over the wire and into the artery. The wire is removed, and the catheter is irrigated with heparinized saline solution.

Dr. Cornell is an assistant professor of radiology at the U. of I. College of Medicine.

For injection into the abdominal aorta, we usually use a No. 240 polyethylene catheter (Clay-Adams). The catheter material comes in 100 foot rolls, and 60 cm. catheters are made from it by tapering the tip over a guide wire, and making five side holes near the tip with a small punch.

When the catheter is in the aorta, we insert into it a very fine (0.015 inch) stainless steel wire to which a small bead of silver solder has been affixed. The bead is advanced until it occludes the tip of the catheter. The contrast material will now come out only through the side holes, preventing a jet from shooting up the aorta. The wire does not interfere with irrigation or injection. A specially made connector with a side arm allows the beaded wire to stay in place while the catheter is irrigated and while the injection of contrast material is made (Figure 1).

Under fluoroscopic control, the tip of the catheter is placed at the level of the renal arteries. Test injections are made with small amounts of

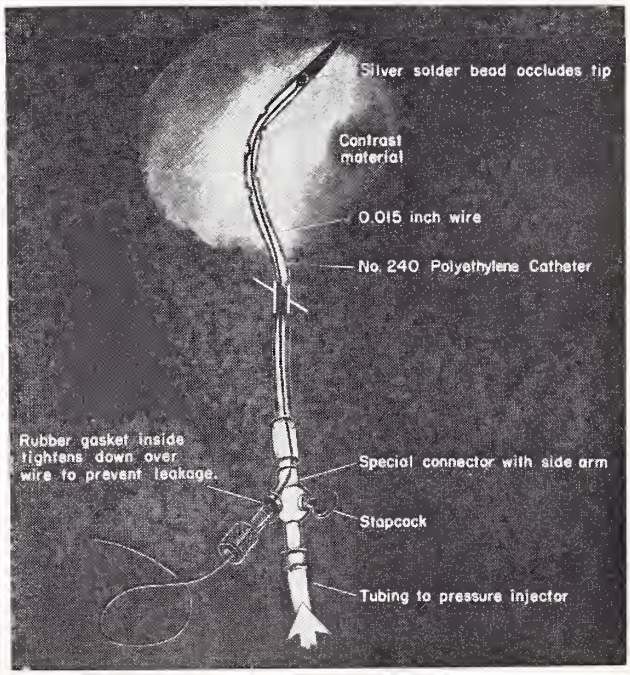


Figure 1. A specially made connector with a side-arm allows a fine wire with a bead soldered to its end to occlude the tip of the catheter so that the contrast material is forced through the side holes.

contrast material to check for good filling of the renal arteries. When the optimum position has been determined (usually over the L1-L2 intervertebral disc), the catheter is taped to the patient's thigh. The patient is positioned supine over a rapid serial film changer. With a pressure injector, 25 cc. of contrast material is injected. Our preference at present is for diatrizoate (Hypaque, Renografin) or iothalamate (Conray, Angioconray) contrast media. Films are taken at the rate of four per second for 1½ seconds, followed by one film at 2 seconds and another at 7½ seconds. We have found that the early films give us the information we need about the renal arteries. The late films show the "nephrogram" phase of parenchymal opacification, and are useful in the evaluation of renal size and contour.

The films are examined prior to removal of the catheter. We do not hesitate to make repeat injections if necessary. If it is desirable to make a selective injection into a renal artery, the guide wire is re-inserted through the straight No. 240 catheter, and the catheter is withdrawn. A precurved radiopaque polyethylene catheter (green Odman) is then threaded over the guide wire into the aorta. Following removal of the guide wire, the catheter resumes its curve and the tip can be manipulated into each renal artery.

For selective arteriography, 6-9 cc. of contrast material is injected by hand or with a pressure injector set at a low pressure. Rapid serial filming is done at the rate of three films per second for two seconds. It is frequently advantageous to turn the patient to a slightly oblique position, with the side to be examined turned up away from the table. This maneuver causes the renal artery and its branches to be more closely parallel to the plane of the roentgenograms.

Following removal of the catheter, pressure is applied over the puncture site for a minimum of 10 minutes. The patient is instructed to stay flat in bed for six hours after the procedure, and not to walk until the following day. Although at least one medical center[4] is doing this procedure on outpatients, it is our current policy to require hospitalization for approximately 24 hours following the examination.

INDICATIONS

1. *Hypertension.* According to Maxwell,[6] from 5 to 15 per cent of hypertensives have renal-artery stenosis as the cause of their hypertension. Criteria such as age at time of onset and duration and family history are not completely reliable in the differentiating of patients with essential hypertension from patients with renovascular hypertension.[5] The presence of an abdominal bruit remains strong presumptive evidence of significant renal-artery stenosis in a hypertensive patient with an abnormal radioactive renogram or intravenous urogram. In Kaufman's hands,[5] the radioisotope renogram approaches 90 per cent accuracy in detecting renal ischemia due to main stem renal-artery lesions. The rapid sequence urogram (fast intravenous injection of a large bolus of contrast material with roentgenograms during the first three minutes) detected the ischemic kidney in 84 per cent. If either of these tests is positive, renal arteriography is clearly indicated.

The number of false-positive renograms and/or intravenous pyelograms is low, and the hazards of the renal arteriogram are small. More problematic is the patient with a negative renogram and rapid-sequence pyelogram, for a few such patients may still have significant renal artery stenosis, usually with good collateral circulation to the involved kidney. In the face of a negative radioisotope renogram and rapid-sequence pyelogram and the absence of a bruit, the clinician must use his judgment as to the advisability of an arteriogram. Of course other causes of hypertension such as pheochromocytoma and coarctation of the aorta must be ruled out. Lesions which may cause stenosis of a renal artery include atherosclerosis, fibrous or fibromuscular stenosis, fibrous bands, aneurysm, idiopathic or post-traumatic thrombosis, and embolism.

2. *Renal Masses.* Renal arteriography can be of great value in differentiating renal carcinoma and benign renal cyst. Accuracy in diagnosis depends on obtaining excellent detail of the renal vascular tree, and this usually requires selective catheterization and injection of the renal artery. In renal carcinoma, tiny tortuous and irregular "tumor vessels" are seen. The tumor is usually as densely opacified by the contrast material as is the remainder of the kidney, unless the tumor is extensively cystic or necrotic. A benign renal cyst, on the other hand, does not opacify at all, and presents as an area of radiolucency with a sharp margin adjacent to or surrounded by opacified renal parenchyma.

3. *Unilateral renal bleeding with a normal pyelogram.* Tumor vessels may reveal a carcinoma too small to cause distortion of the renal collecting system. An aneurysm of the renal artery or an arteriovenous malformation may be the cause of bleeding. Aneurysms may or may not contain calcium in their walls.

4. *Renal Malformations.* Arteriography may be useful in the investigation of suspected aplasia, hypoplasia, ectopia and fusion, as well as in polycystic and multicystic kidneys. A knowledge of renal vascular anatomy may be of help to the surgeon if an operation is contemplated.

5. *Hydronephrosis.* There is a difference of opinion concerning the value of arteriography in hydronephrosis. A lower-pole segmental renal artery may cause or contribute to obstruction at the ureteropelvic junction. Some surgeons believe that this is useful preoperative information. The caliber of the renal artery and intrarenal branches is a fairly good measure of potential renal function in the case of kidney non-function due to ureteral

obstruction. After approximately 30 days of complete obstruction, the renal artery atrophies to about half of its original size and recovery of kidney function is unlikely. Some surgeons regard nephrectomy as the procedure of choice in such cases. A lesser degree of atrophy of the renal vascular tree usually indicates that the kidney can recover its function following the institution of appropriate drainage.[1]

6. *Renal Tuberculosis.* In countries where there is still a great deal of renal tuberculosis, angiography has been found valuable in preoperative evaluation. In Sweden, partial nephrectomy is sometimes done. A renal arteriogram may reveal areas of parenchymal destruction not shown by any other method, and thus may guide the surgeon to the procedure of choice.

7. *Renal Trauma.* In acute renal trauma, clinical and urographic studies may not accurately reveal the extent of the damage. Renal rupture and perirenal hematoma may give identical urographic findings, but can be differentiated by renal arteriography. In the case of injury to the renal artery, immediate repair sometimes obviates the necessity of later nephrectomy. Hypertension and chronic infection can sometimes result from renal injury. The pyelogram may show only minimal deformity of the collecting system. Arteriography, on the other hand, may show severely damaged renal parenchyma.[7]

8. *Chronic Pyelonephritis.* When chronic pyelonephritis is suspected, renal angiography can sometimes show abnormalities of the renal parenchyma which are not shown by any other method.[8] Intravenous and retrograde pyelography will not delineate the renal parenchyma, which in some cases is the principal location of the disease. The arteriogram shows atrophy of the vascular tree, a thin renal cortex, and deformity of the renal contour due to scarring.

9. *Renal Transplantation.* Renal arteriography is necessary in the donor to evaluate the status of the renal vascular tree. It is important to know whether there is more than one renal artery. If the main renal artery bifurcates too early, it may be too short for a satisfactory anastomosis. The renal artery may be too small or may be abnormal. Fibromuscular hyperplasia has been found unexpectedly in a prospective donor.[10]

REPORT OF CASES

Case I. A 31-year-old man had no history of hypertension or urinary difficulty. His normal renal arteriogram is shown in Figure 2.

Case II. A 52-year-old man had headaches and blurred vision of three months' duration. His blood pressure was 240/110 mm. Hg. The intravenous urogram and the radioisotope renogram were suggestive of an ischemic kidney on the left. The renal arteriogram (Figure 3) showed atherosclerotic narrowing of the left renal artery. At the time of surgery, the left renal artery was almost com-

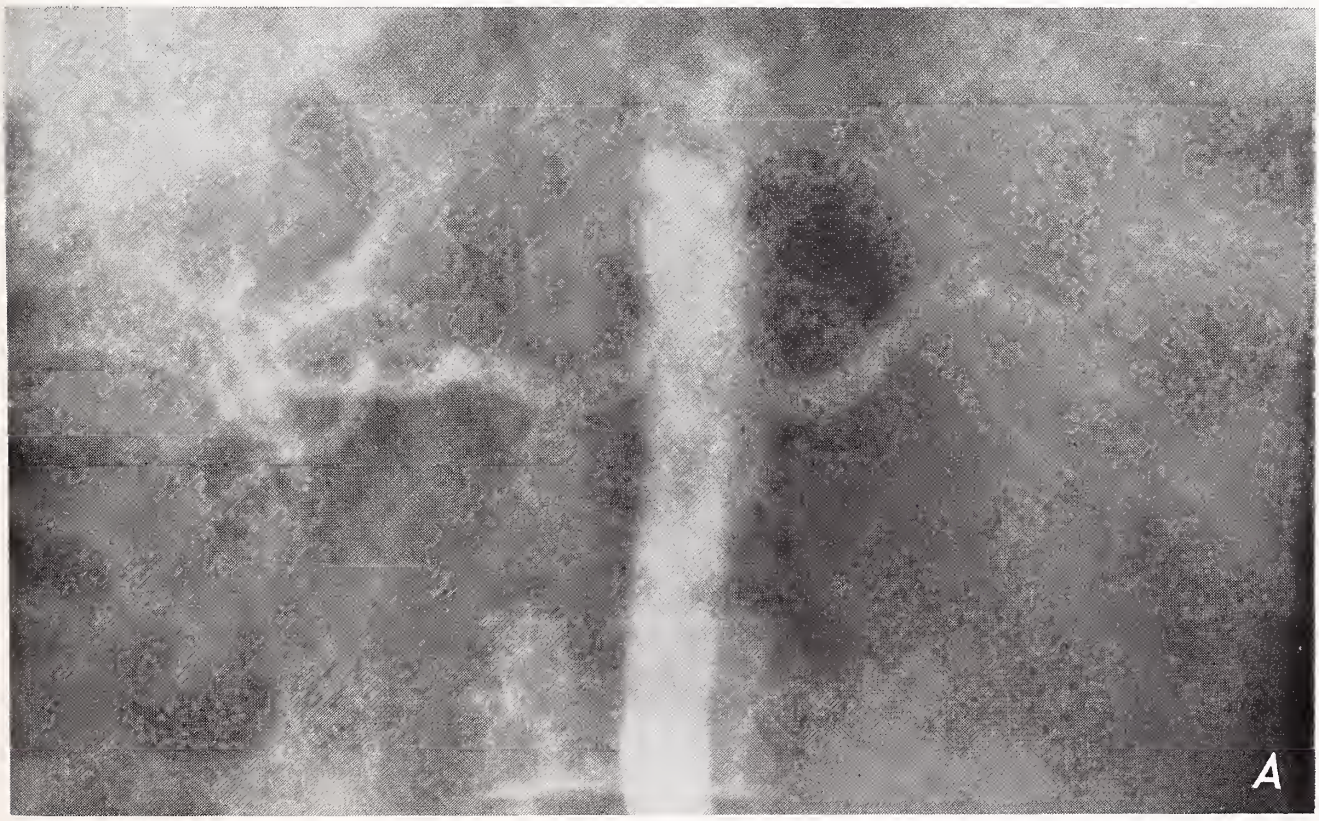


Figure 2 (Case I). Normal renal arteriogram. A. At 1/4 second after the injection there is excellent visualization of the renal arteries with no filling of other visceral arteries.

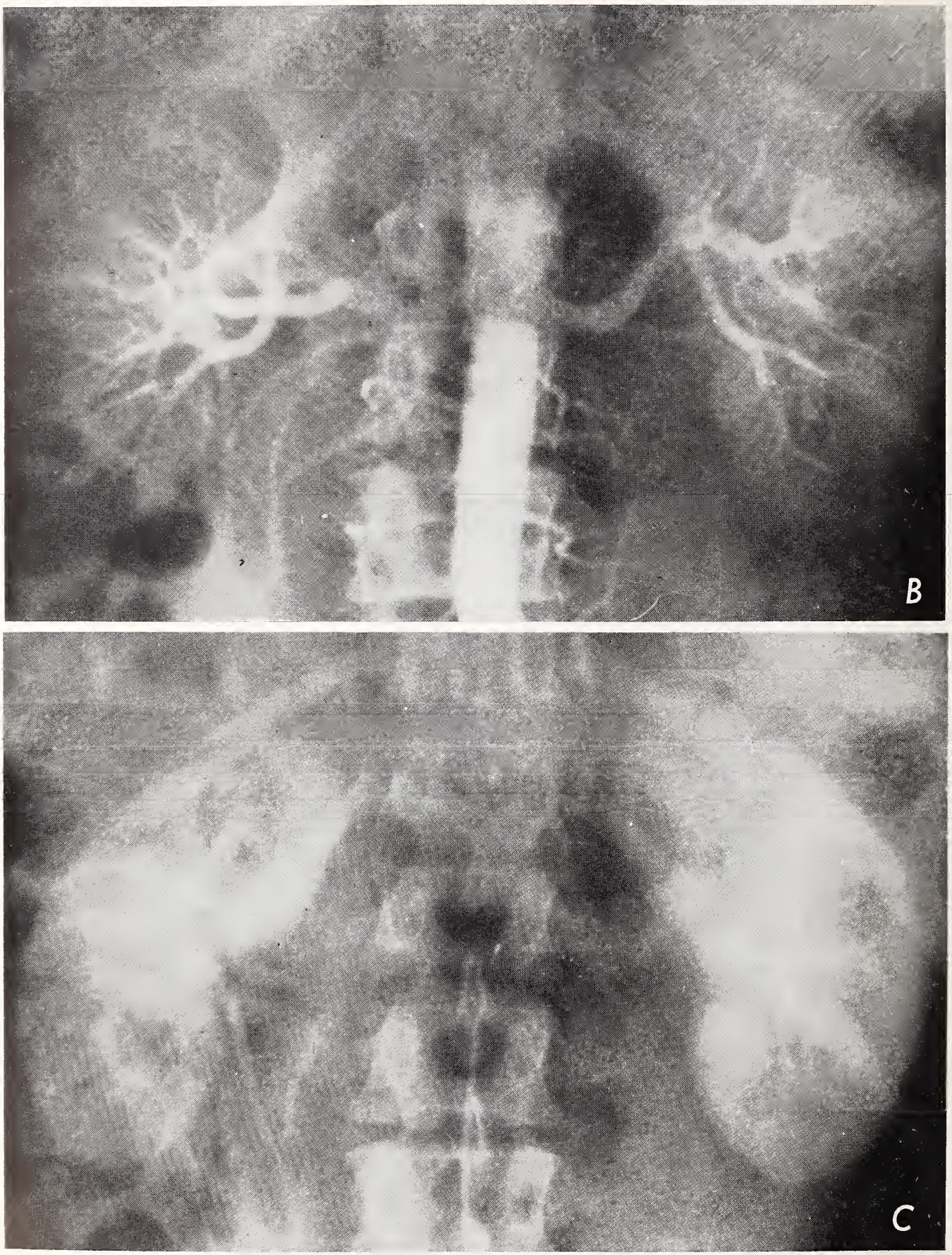


Figure 2 (Case 1). B. At ¾ second, the peripheral branches of the renal arteries are well filled. C. At 7½ seconds, there is good opacification of the renal parenchyma on each side. The kidneys are approximately equal in size. There is beginning visualization of the renal collecting systems and right ureter as a result of test injections during placement of the catheter tip. The small catheter and the metallic bead which occludes the tip are now visible.

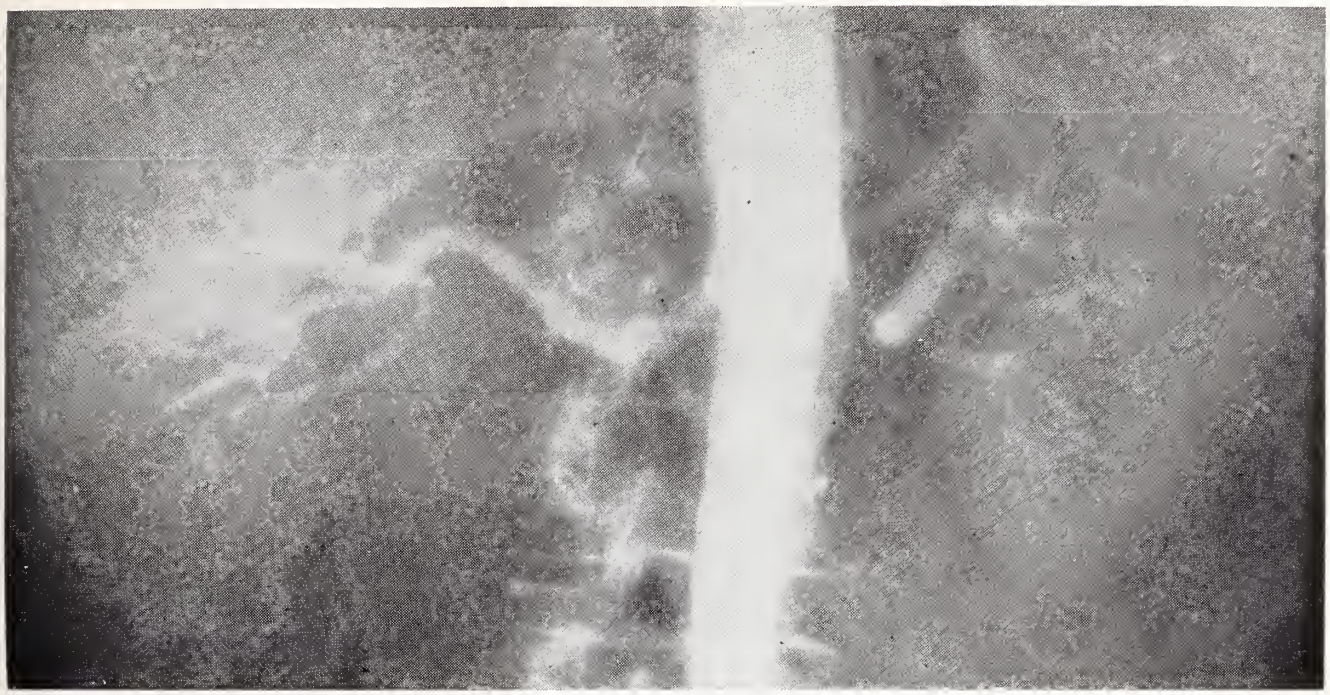
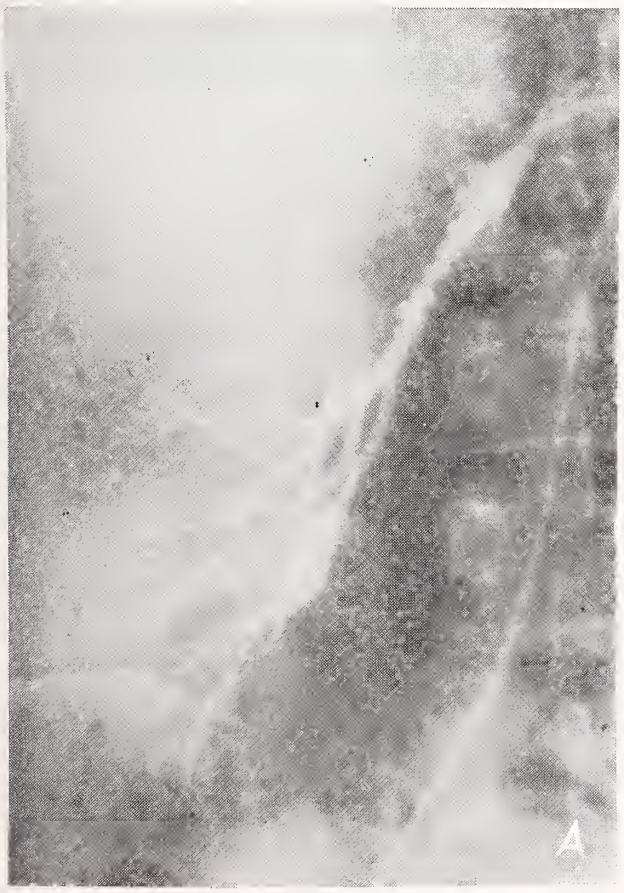


Figure 3 (Case II). Atherosclerotic narrowing. There is striking stenosis of the proximal portion of the left renal artery, with post-stenotic dilatation. There is faint opacification of the splenic and of the superior mesenteric arteries. The right renal artery is normal. There is irregularity of the aorta at the level of the right renal artery, but oblique views showed that it did not affect the renal artery.

pletely occluded. A splenectomy was done, and the splenic artery was anastomosed to the renal artery.

Case III. On a routine physical examination, a 37-year-old woman was found to have a blood pres-



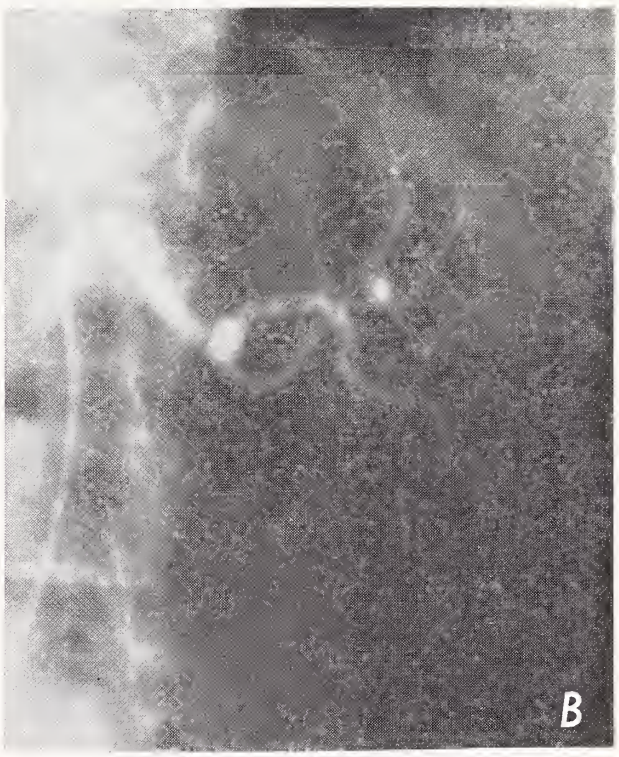


Figure 4 (Case III). Fibromuscular hyperplasia. A. The catheter tip has been placed into the right renal artery which has numerous areas of constriction and dilatation characteristic of fibromuscular hyperplasia. The main renal artery is long and the kidney is low—findings often present in this condition. B. The left renal artery shows less severe changes, mostly involving the upper branch.

sure of 220/120 mm. Hg and grade 3 hypertensive retinopathy. The intravenous urogram was unremarkable. The renal arteriogram (Figure 4) showed bilateral fibromuscular hyperplasia of the renal arteries. Surgery consisted of longitudinal arteriotomy and venous patch angioplasty on each side.

Case IV. A 46-year-old man had had sudden onset of right flank pain when 38 years of age, and was told that he had passed some "gravel." Hypertension was discovered at age 44. His blood pressure was 200/120 mm. Hg. Split renal function studies were suggestive of right renal ischemia. The renal arteriogram (Figure 5) showed atrophy and irregularity of the upper outer part of the right kidney. At the time of surgery, resection of part of the kidney was impossible, and a nephrectomy was done. Pathologic examination showed an infarct of the upper pole.

Case V. A 34-year-old woman gave a history of having had a severe kidney infection at 23 years of age, lasting several months. Since that time she had had recurring bouts of urinary infection. Late in 1962, headaches and blurred vision occurred, and her blood pressure was found to be 200/100 mm. Hg. In the hospital, 4+ proteinuria was present, and the BUN was 50 and the creatinine was 2.9 mEq/L. Intravenous and retrograde urograms showed changes consistent with chronic inflammatory disease bilaterally, more severe on the right than on the left. The renal arteriogram (Figure 6) showed a small, irregular, contracted kidney on each side, with atrophy of the entire vascular tree. No discrete stenosis was present either on the selective renal arteriogram or on the abdominal aortogram. The appearance was characteristic of chronic pyelonephritis.

Case VI. A 54-year-old woman was admitted to the hospital because of recurring left pleural effusion of four months' duration. There were no urinary symptoms. An intravenous urogram showed a distorted left renal collecting system. The renal arteriogram (Figure 7) showed a radiolucent cyst of the left kidney, with displacement of vessels. No operation was performed. Because of a positive skin test, the patient was placed on anti-tuberculous drugs, and the pleural effusion cleared in a month. At follow-up examination four months later, she was doing well with no recurrence of pleural effusion.

Case VII. A 28-year-old mother of four had had no urinary problems until four years prior to admission. Since that time, she had had several urinary tract infections and episodes of pain in the right flank. At the time of hospitalization, the urine was negative. The blood pressure was normal. An intravenous urogram showed distortion of the collecting system of each kidney. A renal arteriogram (Figure 8) showed large cysts in normal-size kidneys. A right renal exploration was done and several cysts were unroofed. The renal parenchyma had a normal appearance.

Case VIII. For a period of eight years, a 60-year-old woman had been known to be hypertensive. Approximately one year prior to hospitalization, she had had a single episode of hematuria. At the time of admission her blood pressure was 190/80 mm. Hg. The hemoglobin was 9.0 Gm. A mass could be palpated in the right upper quadrant. The intravenous urogram showed distortion of the right collecting system and a mass protruding from the right kidney. The renal arteriogram (Figure 9) showed fibromuscular hyperplasia of the right renal artery, and a very vascular tumor having the characteristic appearance of carcinoma. The diagnosis was confirmed by a right nephrectomy.

TABLE I

ANALYSIS OF 144 RENAL ARTERIOGRAMS

Indication for the Procedure	Results	Number
Hypertension	No abnormalities of the renal vascular tree or of the kidneys	43
Hypertension	Arteriosclerotic narrowing of one or more renal arteries	31
Hypertension	No arterial stenosis. Irregular or shrunken kidney. Narrow cortex (Renal parenchymal disease)	21
Hypertension	Fibromuscular hyperplasia of one or more renal arteries	8
Hypertension	Hypoplastic kidney	2
Hypertension	Congenital malformation of renal artery	1
Hypertension	Renal infarct	1
Suspected renal mass	No cyst or tumor demonstrated	11
Suspected renal mass	Renal carcinoma	7
Suspected renal mass	Single or multiple cysts	5
Suspected renal mass	Extra-renal neoplasm	1
Hematuria of unknown source	No abnormality found	1
Hydronephrosis	No abnormal renal artery present	1
Hydronephrosis	Aberrant renal artery	1
Normal volunteers	Normal renal arterial tree	10
	Total	144

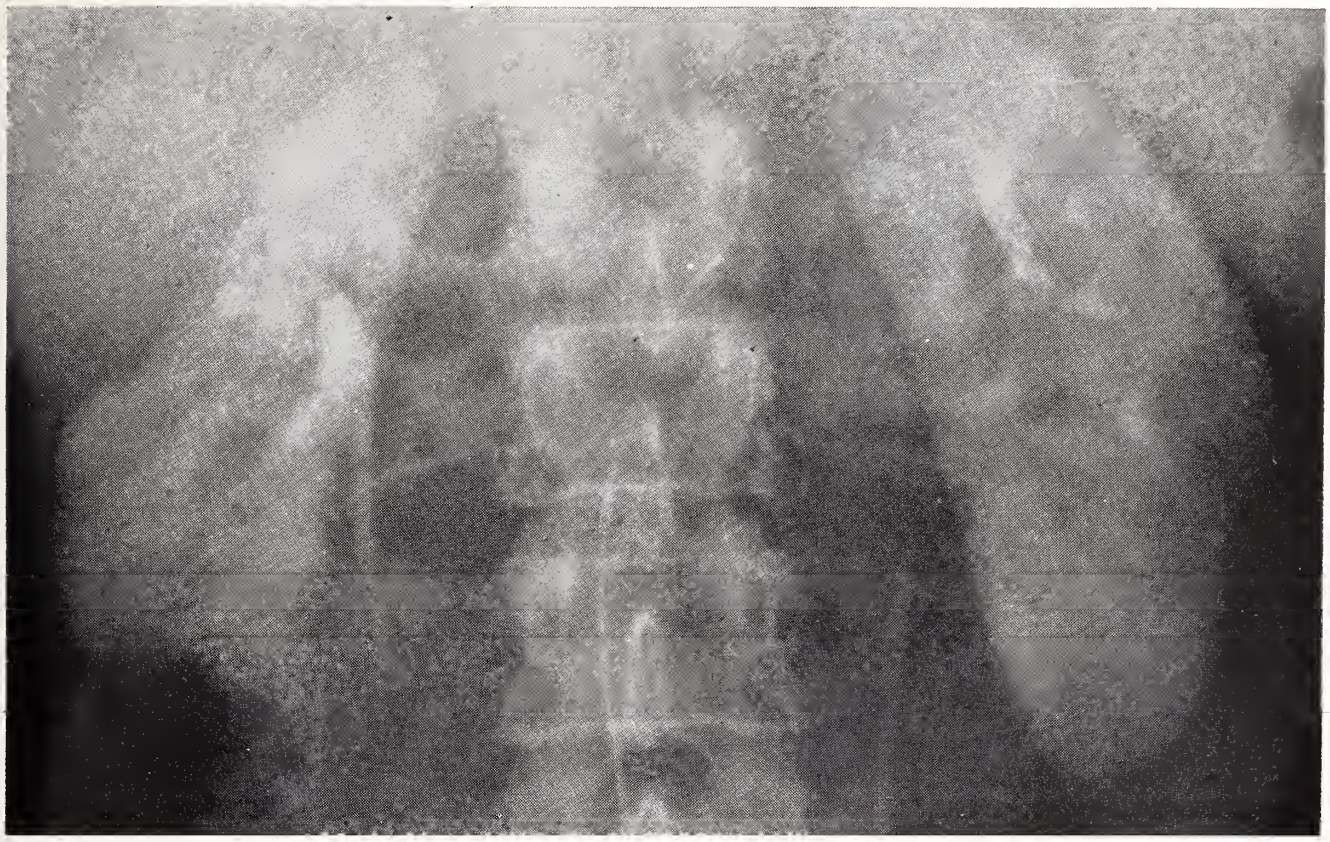


Figure 5 (Case IV). Renal infarct. There is diffuse opacification of each kidney 7.5 seconds after injection of contrast material into the aorta. The left kidney is normal in outline. The right kidney shows shrinkage and irregularity of the upper lateral aspect. The collecting systems are faintly visualized because several test injections of contrast material were made prior to the final injection. Note the small catheter with a metallic bead occluding its tip.

Case IX. A 22-year-old man had complained of intermittent back pain for five years. There had been no other urinary symptoms. An intravenous urogram showed a greatly dilated left renal pelvis. A renal arteriogram (Figure 10) showed a segmental vessel going across the ureteropelvic junction to the lower pole.

At the time of operation, an intrinsic stricture of the ureteropelvic junction was found, and a pyeloplasty was done. The aberrant vessel was

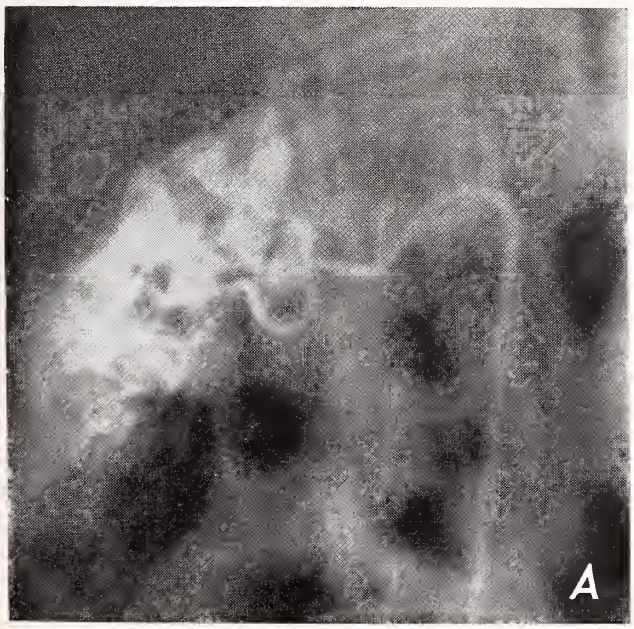
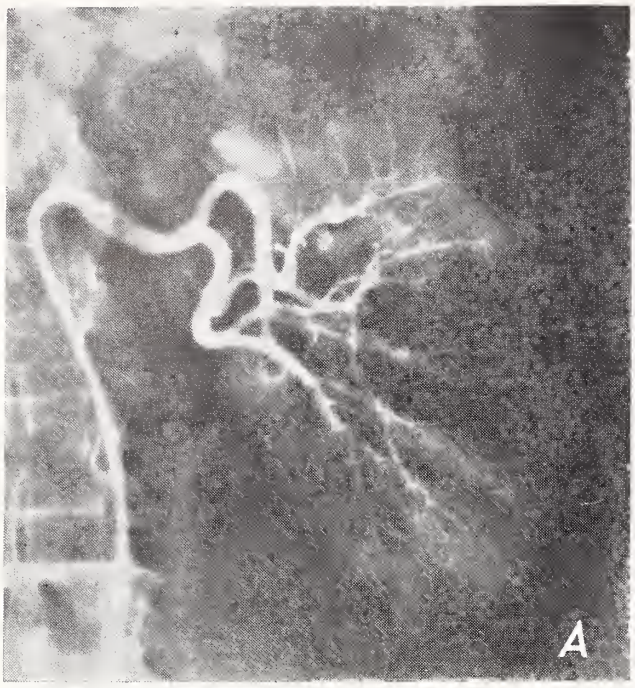


Figure 6 (Case V). Chronic pyelonephritis. A. Selective right renal arteriogram. The entire vascular tree is small. The kidney is small and irregular in contour. B. Selective left renal arteriogram. The changes are not as severe as on the right. The kidney is larger than on the opposite side, but shows considerable irregularity in its contour. The vessels are small and tortuous.



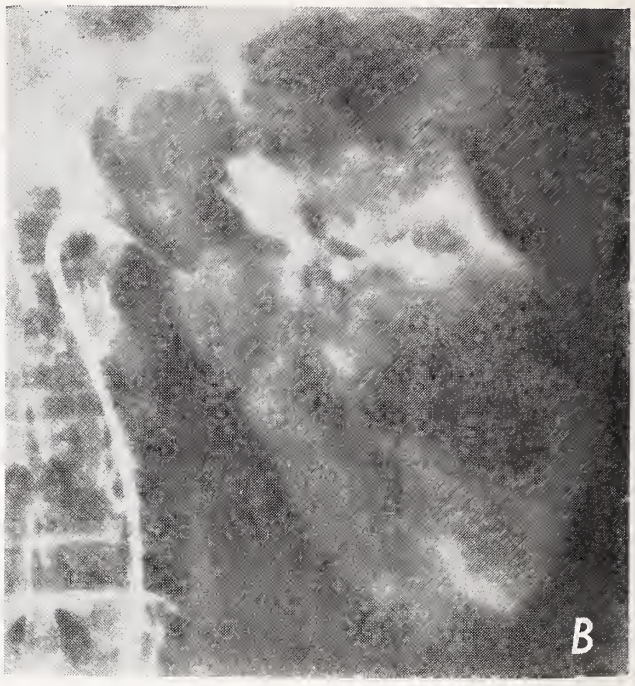
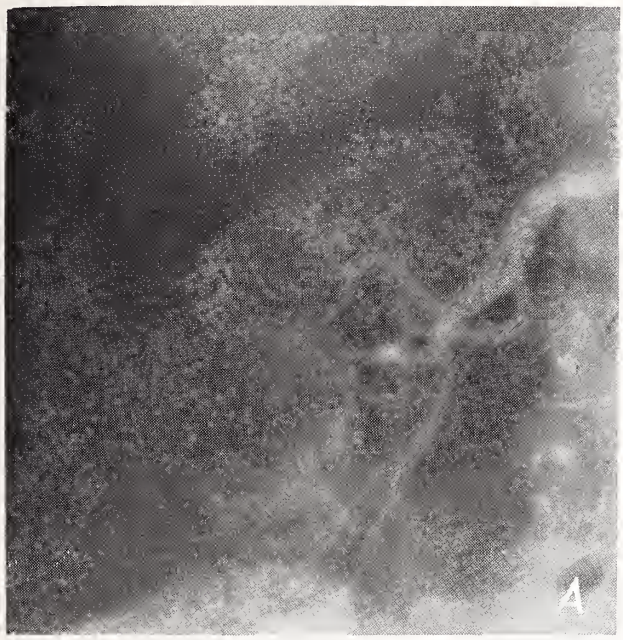


Figure 7 (Case VI). Renal cyst. A. Selective left renal arteriogram, one second after beginning of injection. Vessels in the mid-lower part of the kidney have been displaced by a radiolucent mass. A few vessels which are either anterior or posterior to the cyst appear to be going through it. The upper pole is obscured by gas in the stomach. B. The cyst bulges the lateral renal contour and remains radiolucent 7.5 seconds after beginning of the injection, whereas the remainder of the kidney becomes densely opacified.

Figure 8 (Case VII). Multicystic kidneys. A. Selective right renal arteriogram. The intrarenal vessels are displaced by large radiolucent cysts, some of which extend outside the renal outline. B. Selective left renal arteriogram. A large cyst protrudes out from the upper pole, and another displaces vessels in the upper mid-portion of the kidney. The constriction of the renal artery was due to spasm near the tip of the catheter and did not persist.



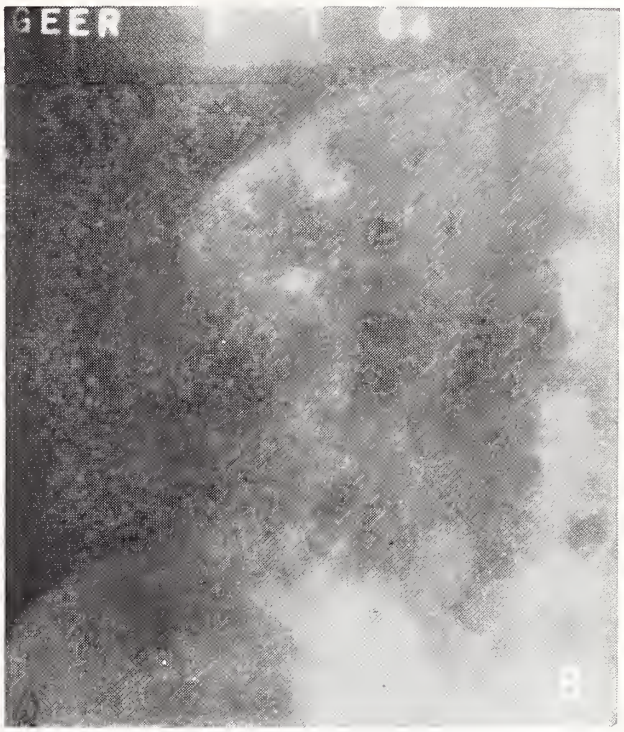


Figure 9 (Case VIII). Renal carcinoma and fibromuscular hyperplasia of the renal artery. A. Selective right renal arteriogram one second after beginning of injection. Note the irregularity of the undivided part of the renal artery. Abnormal tortuous vessels are beginning to show in the mid and lower portions of the kidney. B. At two seconds there is good opacification of the kidney and of the tumor, which extends laterally outside the kidney and contains innumerable abnormal tortuous blood vessels. The overall effect is that of a "tumor stain."

Figure 10 (Case IX). Ureteropelvic obstruction with segmental renal artery supplying lower pole. The catheter has been inserted into a segmental lower polar artery which crosses the ureteropelvic junction. The dilated renal pelvis is partially delineated by the interrupted line. The spermatic artery is seen coming off the renal. The main renal artery supplying the rest of the kidney was opacified by a separate injection, and is not shown.

identified, but was not believed to be the cause of the obstruction.

RESULTS

The results of our studies are shown in Table 1. The majority of the patients were examined because of hypertension, and the studies were positive in 60 per cent of them. In patients suspected of having a renal mass, there were 54 per cent positive arteriograms. Figures 3 to 10 show examples of the abnormalities which we found.

COMPLICATIONS

In this group of 144 patients, there were three serious complications, for an incidence of two per cent. Two patients required repair of a tear in the femoral artery. One patient died three days after the procedure. She was a 50-year-old woman with known hypertension of six years' duration. Two weeks prior to the arteriogram she had had pulmonary edema, aphasia and right hemiplegia, all of which had improved. The arteriogram showed nearly complete occlusion of the distal abdominal aorta, stenosis of the renal arteries and diffuse narrowing of the superior mesenteric arterial branches. Postmortem examination revealed a healing myocardial infarct, severe generalized atherosclerosis, gangrene of the small bowel, bilateral renal infarcts, and occlusion of the left common femoral artery due to a combination of hematoma and atherosclerotic narrowing. The femoral artery occlusion was definitely a complication of the aortogram. The infarction of the kidneys and bowel cannot be ascribed to the arterio-

gram, in view of the antecedent cerebral and myocardial infarcts.

Minor complications were hematoma formation at the puncture site, and occasional nausea after the injection of contrast material. One hypertensive patient started to bleed from the puncture site several hours after the procedure. The bleeding was controlled by means of local pressure. Careful technic and patient cooperation are necessary to prevent hematoma formation. A large hematoma may compress the femoral artery and cause thrombosis of the vessel. If the femoral or popliteal pulse becomes diminished, a hematoma should be evacuated.

Thrombosis at the puncture site may result from leaving too large a catheter in place for too long a time. In most individuals, a small catheter such as the No. 240 polyethylene can be left in the femoral artery for two to three hours without difficulty. Of course it is always advisable to leave the catheter in as short a time as is consistent with obtaining a satisfactory examination. Patients with acquired valvular heart disease are believed to be more susceptible to thrombosis than are patients with hypertension or atherosclerosis.[4] This greater susceptibility may be on the basis of an altered clotting mechanism.

Infection must be guarded against by aseptic technic. It did not occur in any of our patients.

Embolism due to "knocking off an atherosclerotic plaque" did not occur in this group of patients, although we did encounter it in a patient who had a thoracic aortogram. It is an unusual complication.

The development of an arteriovenous fistula at the puncture site is a rare complication which we have not encountered.

The complications of percutaneous transfemoral catheter arteriography have been recently reviewed by Halpern.[4] In a series of 1,000 cases, 52.6 per cent of patients were in the fifth, sixth and seventh decades. The total significant complications were 2.4 per cent. Corrective surgery was required in 0.7 per cent. There were no complications attributable to the contrast material, there was no known renal damage or permanent damage, and there were no deaths. Halpern believes that the percutaneous method, in capable hands, is safer and carries far less morbidity than open arteriotomy.

SUMMARY

The percutaneous catheter method of renal arteriography has been found to be of value in the evaluation of hypertensive patients as well as in the examination of patients with a variety of renal problems. The incidence of serious complications in a series of 144 patients was 2 per cent. The technic, indications, and hazards of the procedure have been discussed. In the absence of serious peripheral vascular disease, it is regarded as the procedure of choice for evaluation of the renal arterial tree.

REFERENCES

1. Abrams, H. L.: Angiography (2 vols.). Boston, Little, Brown and Company, 1961.
2. Adeney, N. F., and Fraser, G. A.: Renal angiography by retrograde femoral catheterization as aid to diagnosis of renal tumors. Brit. J. Surg., **50**:427-431, (Jan.) 1963.
3. Halpern, M., Finby, N., and Evans, J. A.: Percutaneous transfemoral renal arteriography in hypertension. Radiology, **77**:25-34, (Jul.) 1961.
4. Halpern, M.: Percutaneous transfemoral arteriography; analysis of complications in 1,000 consecutive cases. Am. J. Roentgenol., **92**:918-934, (Oct.) 1964.
5. Kaufman, J. J., and Maxwell, M. H.: Surgery for renovascular hypertension; analysis of 67 cases. J.A.M.A., **190**:709-714, (Nov. 23) 1964.
6. Maxwell, M. H., and Kaufman, J. J.: "Renovascular Hypertension: Clinical Characteristics and Diagnostic Tests." In: Kaufman, J. J.: Advances in Diagnostic Urology. Boston, Little, Brown and Co., 1964, pp. 75-109.
7. Olsson, O., and Lunderquist, A.: Angiography in renal trauma. Acta Radiol., **1**:1-21, (Jan.) 1963.
8. Olsson, O.: "Renal Angiography in Pyelonephritis." In: Viamonte, M., Jr., and Parks, R. E.: Progress in Angiography. Springfield, Ill., Charles C Thomas, 1964, pp. 292-299.
9. Seldinger, S. I.: Catheter replacement of needle in percutaneous arteriography: new technique. Acta Radiol., **39**:368-376, (May) 1953.
10. Weidner, W., Riley, J., and Hanafee, W.: Angiographic evaluation in renal transplantation. Radiology, **83**:579-586, (Oct.) 1964.

Pity the Unfortunate Patient With Hypertension

With the gradual identification of secondary forms of hypertension, a profusion of diagnostic tests has resulted, for which each patient is a candidate. . . . Many of these tests are time-consuming, uncomfortable and rather expensive.

The better understanding of high blood pressure that these newer tests offer is valuable; but the vast majority of hypertensive patients have only essential hypertension. Therefore, it is particularly important that the physician originally evaluating the patient consider the severity of the blood-pressure elevation, the age of the patient and any associated diseases before embarking on extensive diagnostic procedures. There is extreme need to consider the real value of a given test to a patient, and whether he, as an individual, will ultimately benefit from the procedure.

The ultimate object of these diagnostic tests is to determine the most satisfactory method of treating the patient. Although it is exciting to find increasing numbers of patients with renal arterial stenotic lesions, pheochromocytomas or aldosterone-producing tumors, at the present time the physician should continue to approach the therapy of essential hypertension with the same zeal that he exhibits when he approaches the diagnosis of these rare secondary forms of hypertension.

—Mahlon K. Burbank, M.D., of the Mayo Clinic, in MINNESOTA MEDICINE, 48:1025, (August) 1965.

Communication Between Physician and Dentist

JAMES H. McLERAN, D.D.S., M.S.
Iowa City

THE VALUE OF GOOD communication in and between the health sciences is well recognized. The field of research offers an excellent example. This concern is occasioned by the delay between the completion of projects and the application of their results to clinical practice. It is a gross understatement, of course, to say that never has research produced so much new knowledge. However, new knowledge must be communicated if it is to be understood, and it must be applied if it is to have value.

Two well-accepted concepts in the health sciences today illustrate the frustrating and sometimes mortal interval between the reporting of knowledge and its clinical application. Although Sir Alexander Fleming reported the antibacterial action of cultures of penicillium in 1929, it was almost 15 years before that first antibiotic was administered for the benefit of patients.[1] The irritatingly slow utilization of fluorides to reduce the incidence of dental caries is another example. In 1940, clear evidence was available that one part per million of fluoride in the public water supply was a safe ratio associated with a low incidence of caries. By 1950, extensive testing programs had reconfirmed the great value of this preventive agent. It seems due only to a lack of communication that this knowledge is not fully utilized today.[1]

We submit that a comparable lack of clear and open communication between physician and dentist must necessarily deprive the public of optimum health care. Health ultimately must mean the optimal condition of the whole human organism. It is axiomatic that health precludes disease in any part of that organism. The World Health Organization defines *health* as the state of "complete physical, mental and social well-being, and not merely the absence of disease or infirmity."[3] We must abandon antiquated theories that segment the human body anatomically and attempt to treat it accordingly.

Dr. McLeran is an assistant professor of oral surgery at the U. of I. College of Dentistry and University Hospitals.

Early appreciation of the significance of oral disease was reported in tablets found in an archeological excavation near the ancient city of Nineveh, which was mentioned in the biblical story of Jonah and the whale. These tablets, written several centuries prior to our present era, contain the chronicle of a physician who was being condemned by his king for not curing him of his illness. The physician said he could cure the fever if the king would follow his instructions, and declared that the "burning which burns his head, his hands and his feet would be relieved by the extraction of his teeth."[2]

Integrity compels us to report that the king was not cured, but the incident is worth recounting as marking an early awareness that dental health and health of the rest of the body are interrelated. That is not, and should not be, a unique philosophy today.

Yet, some members of both the medical and dental professions have ignored or underestimated the role of oral health as a part of the total health of the patient. The causal factors are many and varied. For dentists, the cause is perhaps primarily their more recent evolution to mature professional stature. Diligent and dedicated efforts are helping to broaden the dentists' approach toward patient care. A broadened dental curriculum, especially in the basic sciences, vigorous research programs, increases in the number and quality of dental internships and residencies, emphasis on graduate and postgraduate education, and co-operative efforts on the part of the medical profession—these are among the factors which are contributing to this end.

Understanding and enlightenment are being manifested by the medical profession. A change of attitude has been most prevalent in the large medical centers, where communication of ideas and information between the two professions has been facilitated. It was with the hope and aim of extending this line of communication between physicians and dentists that this article was conceived.

If improved communication between physicians and dentists can lead only to improved total health care, one must seek a starting point. What information needs communicating? I shall discuss just a few areas in which there have been misunder-

standings or faulty communication. It is to be hoped that in subsequent articles these and other areas may be discussed in depth by authorities in the respective fields.

The oral cavity has the same physiology, physico-chemistry and source of nutrition as other body cavities. However the oral cavity, with its associated structures, is unique because of its intimate relationship with the external environment and because of the chemical, bacterial and mechanical insults to which it is constantly subjected. Its unusual vulnerability to disease is, therefore, understandable. It is because of this vulnerability that the oral tissues are such perceptive indicators of systemic health status. Frequently, the first indications of disease in other systems are seen in these structures.[4]

Oral manifestations may be seen in patients with blood dyscrasias, erythema multiforme, pemphigus, diabetes mellitus, tuberculosis, infectious mononucleosis, hyperthyroidism, hyperparathyroidism, Addison's disease, nutritional deficiencies, or any of various other disease processes. Although the mirroring of systemic diseases by the oral tissues cannot be overemphasized, it is a phenomenon of which physicians are well aware, and it has received a proportionately greater exposure in the literature than some of the implications of oral disease on systemic health. Therefore, I shall confine myself primarily to examples of oral disease processes and their role in total health.

The term *oral disease* too frequently is considered synonymous with diseases of the dentition and supporting structures. If we could disregard these latter disorders, there would still remain a minimum of 110 known ailments of the oral structures (this number being dependent on the nomenclature and method of classification).[5] Obviously, it would be impossible within the scope of this discussion to cover all these diseases or even to discuss any one of them in depth. Rather, it will be my objective to mention some of the more obvious ones in a general way. The emphasis will be placed on examples of a few areas where communication might prove beneficial. They are meant to be representative, but by no means comprehensive or exhaustive.

ORAL CANCER

Oral cancer afflicts about 35,000 persons per year in this country. Of that number, approximately 6,000 will die of their disease, and many of the remaining will be left with malfunction and disfigurement. When one considers that present diagnostic techniques are accurate and relatively simple and that the mouth is readily and completely accessible, these figures are appalling.[8] When detected early, prior to 1 cm. in diameter, most oral lesions are 85 to 90 per cent curable.[11]

Regular dental examinations, if patients seek them, put the dentist in a favorable position for early, life-saving detection of cancerous and precancerous lesions. His familiarity with the normal appearance of the oral cavity should aid him in this diagnosis. Although carcinomas of the lower lip are now showing an up to 85 per cent curability rate, the prognoses for lesions located in other parts of the oral cavity are not nearly so favorable. As you know, low curability rates are in large part due to delay in detection.

Although definitive treatment of this disease is performed by an oncologist, the dentist may have useful services to perform other than his role in the early detection of the disease. Many times the dentist is called upon for construction of shielding splints prior to radiation therapy, and of prostheses following a loss of tissue substance.

Osteoradionecrosis. With the effective use of radiation therapy for treatment of oral cancer, the question of its effect on the normal structures of the mouth has become vital. Except for a recurrence of the malignancy, the most serious problem is the development of osteoradionecrosis. This is an area where cooperation between the professions is extremely important. Though there is no uniformity of thought or opinion about the dentition in relation to radiation treatment of oral cancer, there are a few generally accepted principles that should be conveyed:

1. It is essential that a thorough oral examination be performed prior to radiation therapy. At that time, consultation between the radiologist and the dentist is essential so that the dentist may be aware of the field of radiation and the structures which will be involved.

2. Most authorities agree that all teeth in the line of radiation should be removed. Although the teeth themselves do not demonstrate direct changes from radiation, they do exhibit an increased incidence of dental caries, especially of the cervical type. This increase is attributed to changes in the characteristics of the saliva resulting from direct or indirect radiation of the salivary glands. Therefore, teeth that have apparently been normal prior to radiation soon become involved with disease processes that necessitate their removal. The supporting bone does not have the ability to react in normal fashion to extraction healing or to infection, partially at least because of permanent and irreversible damage to the vascular bed. Although the teeth may not be removed until many years later, the incidence of osteoradionecrosis following the extraction is significant. The mandible appears to be more susceptible than the maxilla, probably due to the difference in vascular supply.

3. Teeth that have been left in irradiated areas need meticulous and constant care to prevent dental disease leading to subsequent extraction. Not only is the quantity and quality of saliva adversely affected following radiation therapy in these patients, but their oral hygiene invariably deteriorates, too.

Special Tumors. Some tumors of the jaw are unique. Histologically, they may resemble highly malignant tumors of other parts of the body, and yet they have entirely benign clinical courses.

The giant-cell reparative granulomas are of this group. Their histologic appearance may be indistinguishable from that of true giant-cell tumors of long bones, but their clinical course bears no resemblance. Curettement is the treatment of choice, and is curative. To perform a radical resection of all or part of the jaw for a benign lesion is disastrous. Unfortunately this has occurred, leading to life-long facial deformity.

DISEASES OF THE DENTITION AND SUPPORTING STRUCTURES

Almost the entire population is affected by a high incidence of dental diseases beginning in early life and becoming progressively more severe with age. They are the most prevalent of all the chronic diseases which afflict mankind.[12] This high incidence, coupled with the irreversible and cumulative nature of most dental disease, has given them an aura of inevitability and hopelessness. Unfortunately, they cannot be cured by prescription or education, and they will not heal spontaneously.[1]

These factors have compounded the problem of maintaining dental health by keeping much of the population from receiving proper care. Less than 40 per cent of the people in this country receive adequate dental care, and more than 20 per cent have never visited a dentist.

In the past, the universality of dental disease has focused the major effort of the dental profession upon the arrest of these processes and the correction of the defects they have created. Only in recent years has emphasis been placed on preventing them.

This shifting of emphasis toward prevention of dental disease has been instituted for several reasons:

1. Dental caries are recognized as infectious processes, and not just as "holes in the teeth," and they begin in any area where micro-organisms can remain for a period of time.[6]
2. It is known that certain people are either caries-immune or caries-susceptible because of complex genetic and systemic as well as local factors, many of which have yet to be discovered.
3. Dietary factors are important, both locally and systemically.
4. Topical and systemic fluorides are essential.
5. Malocclusion and systemic factors have roles in peridontal disease.
6. This health problem cannot be solved except by reducing its incidence.

NEED FOR COMPLETE ORAL EXAMINATIONS

Frequent, complete examinations of the oral structures are mandatory if there is to be any hope of controlling oral disease. Such examinations must necessarily include periodic full-mouth radiographic surveys of the teeth and periodontium. A major portion of incipient oral disease cannot be observed by a cursory or even a thorough clinical examination. Early discovery of neoplasms, cysts (odontogenic or developmental), inflammatory lesions, impacted teeth, periodontal disease, dental caries, etc. must be made by use of radiographs. By the time there are clinical manifestations of any of these processes, they are almost without exception far advanced. The prognosis many times is drastically affected by that time.

Radiation hazards are negligible with proper filtration and collimations, with ultra-speed film, and with shielding, lead aprons when indicated, and periodic maintenance inspection of the apparatus. With these precautions, a full-mouth dental survey gives less than 0.001r total body radiation and zero gonadal radiation. Without a lead apron, if 20 full-mouth surveys were made over a 30-year period, the total gonadal dosage in a male would be only 0.3r, and the female dosage would be about 0.05r. Compare this to the unavoidable background radiation exposure over the same 30-year period of 4 to 5r.[9]

Not infrequently a child or an adult is seen in the dental office for treatment of an acute dental infection just a few months after a tonsillectomy or complete physical examination. This infection might conceivably have been avoided if the doctor of medicine had referred the patient for a complete oral examination. Recognition by the Joint Commission on Accreditation of Hospitals, the Armed Forces and many of the major medical centers that a complete physical examination must necessarily include a thorough oral examination should lend strong support to this principle.

PEDODONTICS

Merely for convenience, I shall now classify a few problems as falling within the limits of specific dental specialties. In presenting them thus, I do not mean to suggest that they must be treated by specialists. On the contrary, most of them are handled competently by the dentist. Pedodontics is dentistry for children. Certain aspects of oral care are unique to children, and it is significant that misconceptions regarding oral health concern patients in the pedodontic age groups.

Preventive Dentistry. A fallacious concept propagated by lay and professional people alike is that the primary or deciduous dentition is expendable and of little consequence. This theory fosters the misconception that the primary dentition does not need care, restoration or replacement when lost. In reality, for functional general health and esthetic reasons, it is vitally important that the primary dentition be maintained. If a tooth is lost pre-

maturely, it must be replaced so as to prevent malocclusion and other disturbances of the permanent dentition.

Preventive dentistry actually starts with the prenatal care of the mother. The mother's diet during the period of tooth formation is of utmost importance. In general, for pregnant women, there has been a tendency to slight the systemic intake of fluorides while overstressing the intake of calcium. Up to 1 part per million of fluorides in the water supply is the preferable method of administration. However, systemic intake by tablet or liquid is a good alternative throughout the full term of pregnancy, but particularly during the second and third trimesters. When the infant is two to three months old, there is need for fluoride intake in the drinking water or by tablets dissolved in juice, milk or other vehicle.[10]

Comparatively speaking, Iowa has made great strides in the fluoridation of water supplies as a public health measure. However, much remains to be done. At present, there are 62 fluoride installations serving 70 communities in this state, and an additional 152 communities have adequate to excessive natural fluorides in their water supplies. Thus, approximately 961,000 people in the state are protected by this means.[7] But there remain over 500 communities in the state which *do not* have adequate fluoride content in their water supplies, and only two Iowa communities have adopted the measure this year.[7] Although the American Medical Association and the American Dental Association have given unqualified support to the fluoridation of water supplies, more vigorous and informed support is needed on the local level. Members of both the dental and medical professions need to give more than lip service to this measure.

Another important aspect of preventive dentistry is the principle known as interceptive orthodontics. This, in general, refers to early treatment of the mixed primary and permanent dentition through the use of appliances or through selective removal of individual primary or permanent teeth to avoid malocclusion and dentofacial irregularities. It is important, for instance, to maintain the space when a primary tooth has been lost prematurely, so as to preserve the proper arch form and space for the permanent successor.

General Problems in Children. It seems advantageous for the physician to be acquainted with the general eruption and shedding times of the primary dentition. He should also be careful of what he says to the child or in the child's presence, so as to prevent him or her from becoming a dental-management problem and, therefore, from shunning necessary dental treatment. The psychological aspects of caring for oral health in children cannot be overemphasized. For instance, the child who is seen for his first dental appointment at 2½ to 3 years of age, and who hasn't had prior unpleasant experiences or unfavorable conditioning from his parents, generally becomes and remains a very cooperative patient throughout life. The alert and wise dentist avoids use of such terms as "shots," "needles," "blood," "pain," etc., and uses alternate terms instead.

Oral Habits. Many feel that there is need for standardizing the approach of pediatricians and pedodontists in regard to such habits as thumb-sucking and the use of pacifiers. In general, pedodontists take the position that if the habit is corrected prior to four years of age, most of the damage due to these habits will be rectified by muscle action of the lips and tongue. Prior to that time, it is felt that these habits may be complicated by parental stress, and can possibly be alleviated by consultation with the parents. Reminders such as bitter agents and appliances should be used only after four years of age and in conjunction with the child's desire to stop the habit. The permanent damage created by the continuance of these habits after the eruption of the permanent dentition deserves consideration both for functional and for psychological reasons.

PERIODONTICS

Periodontal disease means disease of the periodontium, and the periodontium consists of the periodontal membrane, the alveolar bone surrounding the roots of the teeth, and the gingival and mucosal covering tissues together with their underlying connective tissues. This disease process may be of a local or systemic etiology, or perhaps a combination of the two.

This disease process is nearly universal. Many physicians do not realize that almost every one of their patients has some degree of periodontal disease. Prior to age 35, more teeth are lost because of dental caries than because of any other single cause. After this age, however, the greatest cause for loss of teeth is periodontal disease. Yet, though more prevalent in the older age groups, it is by no means restricted to those groups.

Characteristically, the disease is chronic, and if left untreated, it will lead to the loss of the involved teeth. The area of infected and often suppurative tissue involved in a moderate case of periodontal disease is approximately equivalent to the surface area of the flexor surface of the forearm. This amount of infection in any other area of the body, as you know, would receive immediate and vigorous treatment. Although varying degrees of marginal gingival inflammation, mobility of the teeth and other clinical manifestations are generally present, the condition frequently becomes evident only after thorough clinical and radiographic examinations by competent personnel. Detection and treatment in the incipient stages are vitally important.

In the advanced stage it is very important for the physician and dentist to work in close cooper-

ation, since the elimination of local factors will prove of only temporary benefit unless systemic factors are corrected. The periodontium is hypersensitive to changes in diabetes, endocrine disorders, blood dyscrasias and other systemic diseases. There is no type of oral disease about which there is such a vital need for patient education.

ORAL SURGERY

The oral surgeon is the member of the dental profession who has the most frequent opportunities to work with the medical profession, not only because his three-year residency training program is in the hospital, but also because his treatment procedures generally have systemic implications. Despite this relationship, however, he has treatment problems of which physicians may not be fully aware.

Traumatic Injuries of the Jaws. Automobile accidents are adding importance to the treatment of traumatic injuries of the jaws. Whenever head injuries have been sustained, jaw fractures must be suspected. Although fractures of the maxilla and mandible, *per se,* are seldom life-threatening, early treatment is essential. Of course this early treatment should be undertaken only after such life-saving measures as establishment of an airway, arrest of hemorrhage, treatment of shock and establishment of neurologic stability by the medical team.

If early treatment is available, reduction and fixation of the jaw fractures should, generally, be achieved prior to definitive closure of associated facial lacerations, so as to facilitate reduction and fixation and also to prevent disturbance of the plastic closure of the lacerations.

In the treatment of jaw fractures, the most important considerations are the restoration of occlusion and function, and the preservation of the interarch space in edentulous areas for later rehabilitation procedures. Though slight discrepancies can be tolerated in fractures of the long bones, they may be disastrous in treatment of fractures of the jaws. Discrepancies of only a few millimeters may lead to mutilation and loss of masticatory function. If correct occlusal relationship is achieved, anatomic continuity and esthetics will necessarily follow.

To avoid malunion, nonunion or malocclusion, it is absolutely essential that immobilization be achieved. Immobilization technics may vary from intermaxillary immobilization alone, to the use of such methods as direct transosseous wiring, skeletal-pin fixation, bone splints, intermedullary pins, craniomaxillary suspension, head caps, etc.

Traumatic Injuries of the Dentition and Associated Structures. Early treatment of traumatic injuries to the dentition and the closure of lacerations of the oral mucosa are also important. Too frequently, injuries to the teeth and alveolus have remained untreated, though lacerations of the lip and face were repaired several days before. It is important to realize that partially or completely avulsed teeth can be saved with proper *early* treatment. These teeth may or may not need root-canal therapy. They most certainly will need to be splinted to intact segments for immobilization. Following this treatment, periodic postoperative roentgenograms will be needed because of the possibility of degenerative changes leading to infection and other complications. Should these degenerative changes occur, early treatment will improve the prognosis. It is not unusual for completely avulsed teeth that have received immediate root-canal therapy and reimplantation to give many years of service to the patient.

More favorable results may be achieved if lacerations of the mucosa and tongue are closed early. Such closures can prevent scarring and mutilation, and are especially important if the lacerations are in the area of a present or future dental prosthesis.

Infections. It is well-recognized that acute oral infections can be especially hazardous because of unfavorable venous drainage and potential extension to fascial spaces. These infections can lead to cavernous sinus thrombosis, Ludwig's angina, mediastinitis and other critical situations. Although the acute phase of infection can be treated with chemotherapeutic agents, it is mandatory that the cause be removed. The definitive treatment may include root-canal therapy, periodontal therapy, cyst-enucleation or extraction.

If left untreated, chronic infections can serve as foci of infection, and can extend and involve other structures or lead to osteomyelitis. Consideration of odontogenic infection as the etiology of focal infections has progressed from one extreme to the other, leaving us with a more rational approach today. Whether the theory regarding foci of infection is accepted or not, one must agree that the objective of treatment is to eliminate all potential sources of infection, wherever they may occur in the body.

The incidence of osteomyelitis of the jaws is steadily increasing. Although it is by no means of the magnitude that it was prior to the advent of antibiotics, it is once again becoming a serious problem. This is, undoubtedly, due to the development of resistant strains of bacteria.

If the etiology of acute and chronic infections of the oral cavity is to be removed, a thorough examination is a prerequisite.

Impacted Teeth. The removal of impacted teeth is almost universally indicated. The antiquated theory of "letting sleeping dogs lie" can no longer be defended. If one recognizes the potential of the enamel organ around the crown of an impacted tooth for either epithelial- or connective-tissue proliferation, one cannot dispute this premise. The formation of cysts and odontogenic tumors accounts for only some of the complications seen with impacted teeth. They may also be the primary cause

of infections, fractures and temporomandibular-joint dysfunction.

Impacted teeth should be removed early in life —preferably in the patient's late teens or early twenties. The postoperative difficulties and degree of surgical trauma will be less in early adulthood.

PROSTHODONTICS

Prosthodontics is the dental specialty concerned with the replacement of lost parts of the dentition or jaws. We must emphasize the need for quality prosthetic replacement in the event of partial or complete loss of dentition. This need is amplified by the increasing number of geriatric patients.

If the loss of the dentition is partial, then prosthetic replacement is essential to prevent deterioration of the remaining teeth, with a subsequent crippling loss of function. The loss of one tooth, if not replaced by a bridge, can lead to drifting and overeruption, with subsequent pathologic changes in the remaining dentition.

If there is a complete loss of the dentition, prosthetic replacement is essential for function, nutritional health and esthetics. Furthermore, replacement is fundamental to the patient's emotional and social adjustment.

It is not fully appreciated that complete dentures do not eliminate the need for regular periodic examinations. These periodic examinations for adjustment, relining or reconstruction of the prosthesis are needed for the prevention of neoplasms, rapid pathologic resorption of the bony foundation and other complications.

AREAS OF GOOD COMMUNICATION

From the foregoing statements, one might form the mistaken conclusion that I feel there are no areas in which communication between dentistry and medicine has been good. There are numerous areas where understanding of the problems has led to improved patient care.

Cardiovascular Disease. In 1963, a conference was sponsored jointly by the American Heart Association and the American Dental Association to discuss "The Medical-Dental Management of Patients with Cardiovascular Disease."[13] That meeting represented the ultimate in medical-dental cooperative efforts.

Preventive dental procedures should be instituted early in such patients because of the progressive nature of many cardiovascular diseases and the decreased ability of these patients to tolerate stress. It would be desirable for the physician to refer the patient for oral examination and necessary treatment soon after he makes the diagnosis of cardiovascular disease. The dentist, in turn, has a responsibility to maintain the oral health of this patient by periodic re-examinations and treatment.

If dental treatment is indicated in these patients, it is imperative that they have proper management in the dental office. This management should be on an individual basis after a careful consultation with the patient's physician. Preoperative sedation, prophylactic antibiotics, adequate local anesthesia and resuscitation equipment may be needed.

These patients often tell their dentist that they have been advised not to have local anesthetics with epinephrine or other vasoconstrictors, despite the fact that there has been adequate research to refute that theory completely.[13, 14] Although a local anesthetic is the agent of choice in these patients, it must be properly administered and must provide adequate, profound anesthesia. Otherwise, the patient, through apprehension and pain, will discharge endogenous epinephrine many times greater than the minimal quantities contained in local anesthetic solutions. It is not always realized that vasoconstrictors such as epinephrine used in dental local anesthetics are dilute solutions of 1:100,000 or less. Vasoconstrictors in local anesthetics are generally indicated because they insure more profound anesthesia and limit the rate of absorption of the local anesthetic agent.[13, 14] Dentists realize that it is absolutely essential that aspirating syringes be used to prevent intravascular injections.

Until the present decade, most physicians and dentists felt it necessary for patients on anticoagulant therapy to be deprived of the drug prior to any oral surgical procedure, regardless of its extent. This sudden withdrawal of the anticoagulant drugs unnecessarily threatened the patient with the formation of a new thrombosis or embolism. We now realize that if the patient's prothrombin time can be maintained at 1½ to 2 times the control level, or approximately 25 to 30 per cent, most extractions or oral-surgery procedures can be controlled by use of local hemostatic agents.[14, 15] No dosage modification is required for injection of local anesthetics, and thus the dental restorative procedures can be undertaken on the patient who is on anticoagulant therapy.

Corticosteroid Therapy. With the increased use of corticosteroids by physicians, another area of communication was needed. Because of this exchange, the dentist who is going to perform an oral-surgery procedure, after consultation with the physician, realizes that the dosage of the drug needs to be increased during the treatment course. The patient who is unable to withstand stressful situations because of adrenal insufficiency will benefit from this communication.

Diabetic Patients. Both physician and dentist realize the importance of maintaining immaculate oral health in the diabetic patient. Because of information given by the medical profession, the dentist is aware that the well-controlled diabetic, after the normal insulin dosage and normal dietary intake, can be managed for dental treatment in a manner comparable to his patients with nor-

mal health. Of course, precautions such as appointments soon after a normal meal, short appointments and precautions against hypoglycemic reactions and infections are essential.

Hemophiliac Patients. Unfortunately, all people concerned may have been over-educated regarding bleeding disorders. Thus, it is not uncommon to find gross oral neglect in the patient suffering from hemophilia. Many times this is due to reluctance on the part of the dentist, the physician or the patient himself to risk dental treatment. This reluctance is completely unjustified. Preventive dental care is of even more vital importance to this patient, so as to prevent the need for more extensive and possibly life-threatening procedures. There is no reason why such a patient, with proper precautions and after consultation between dentist and physician, cannot undergo restorative and endodontic procedures.

Cleft-Palate Patients. The cleft-palate patient is an outstanding example of cooperation between professions. In most cleft-palate centers, physicians, dentists and speech pathologists work together in a team approach for better patient care.

These that I have mentioned are but a few of the areas where improved communication has led to improved patient care. We are sure that our cooperation will improve if we keep in mind that the conservation of health is our ultimate objective.

SUMMARY AND CONCLUSIONS

In this discussion we have attempted to point out but a few of the areas where improved exchange of knowledge would benefit total health care. In listing these, we have used some of the dental specialties as headings. Additional problems could have been listed under some of the other specialties of dentistry, such as orthodontics, endodontics, oral roentgenology and diagnosis, and oral pathology.

In the medical profession, it is readily recognized that no one becomes qualified today as a general surgeon, orthopedic surgeon, internist, opthalmologist, etc., without special formal training and board certification. The same is true of the dental profession. Formal training and specialty boards are required of dentists with specialty practices in pedodontics, orthodontics, oral surgery, etc.

The general-practicing dentist has not been mentioned specifically, but, as in medicine, it is the general practitioner who must detect the problems and initiate the work of solving them. The growth of the scope and complexity of dentistry has affected him more than any of the specialists.

We have tried to mention a few of the many health problems where increased cooperation would be beneficial. Most important, we feel, is the need for cooperation and support from the physicians in educating the public as to the necessity for oral health. The faith in and respect given to the family physician places a special responsibility on him. His responsibility is to total health care, which necessarily includes education and encouragement in oral health.

It is hoped that this discussion will stimulate interest in a series of articles on these subjects and others. We hope to see a comparable series of articles by physicians inaugurated in the IOWA DENTAL JOURNAL. We are sure there are a number of authorities who would be happy and willing to contribute to such a series. This improved communication could only bring us closer to our mutual objective of optimum health care.

On behalf of the Iowa Council on Dental Health, we want to express our appreciation to the editors of the JOURNAL OF THE IOWA MEDICAL SOCIETY for this opportunity to express our thoughts.

ACKNOWLEDGEMENT

The author is grateful to the following individuals for their counsel and assistance in the preparation of this article: Merle L. Hale, D.D.S., head, Department of Oral Surgery, College of Dentistry and University Hospitals; John C. Montgomery, D.D.S., assistant professor, Department of Oral Surgery, College of Dentistry and University Hospitals; Dale F. Redig, D.D.S., head, Department of Pedodontics, College of Dentistry; Olaf E. Langland, D.D.S., head, Department of Oral Diagnosis, College of Dentistry; and Surendra M. Mankodi, D.D.S., assistant professor, Department of Stomatology, College of Dentistry.

REFERENCES

1. Hollinshead, Byron S.: "Communication and Application of Research Findings." In: Survey of Dentistry, 1961, pp. 435-439.
2. Thorpe, B. L.: History of Dental Surgery, 1909, v. 3.
3. Pearlman, S.: Relation of dental health to general health. J.A.D.A., **61**:484-487, (Oct.) 1960.
4. Burket, L. W.: Medical-Dental Relations, 1952. Ch. I, p. 3.
5. Bhaskar, S. N.: Oral pathology in children. A.S.D.C. (Apr.) 1965.
6. Massler, M.: Dental caries; infectious process. Iowa Dental Journal, **51**:77, (Apr.) 1965.
7. Henshaw, C. H., director of Division of Dental Hygiene, State Department of Health: Personal communication.
8. Editorial: Oral cancer. J.A.D.A., **70**:945-946, (Apr.) 1965.
9. Nelsen, R. J.: Hazards in roentgenography. Dental Clin. North America, (Nov.) 1960, 771-778.
10. Redig, Dale F., head, Department of Pedodontics, U. of I. College of Dentistry: Personal communication.
11. Nepola, S. R., and Allenby, R. W.: Examination of suspicious oral lesions and cancer detection. J.A.D.A., **70**:884-889, (Apr.) 1965.
12. Andelman, S. L.: Relationship between physicians and dentists in field of oral surgery. J. Oral Surg., **22**:9-10, (Jan.) 1964.
13. Report of Working Conference Jointly Sponsored by American Dental Association and American Heart Association: Management of dental problems in patients with cardiovascular disease. J.A.D.A., **68**:333-342, (Mar.) 1964.
14. Chamberlain, F. L.: Management of medical-dental problems in patients with cardiovascular diseases. Modern Concepts of Cardiovascular Disease, **30**:697-700, (Dec.) 1961.
15. Frank, B. W., Dichhaus, D. W., and Claus, E. C.: Dental extractions in presence of continual anticoagulant therapy. Ann. Int. Med., **59**:911-913, (Dec.) 1963.

LOMOTIL *Pharmacologic Activity*

The significant pharmacologic actions of Lomotil are summarized as follows:

Evidence indicates that Lomotil acts directly by inhibiting excess peristalsis.

Lomotil is not known to inhibit nonpropulsive intestinal movements.

Roentgenograms demonstrate that this activity occurs within two hours after oral administration and persists for at least six hours.

Comparative studies in the rat show Lomotil to be more effective in inhibiting fecal excretion than either codeine or morphine.

Analgesic, anticholinergic, mydriatic and gastric secretory effects have not been significant.

Reduction of propulsive motility with Lomotil relieves spasm and cramping, allows physiologic absorption of fluid and reduces frequency of evacuations to provide prompt, symptomatic control of virtually all diarrheas.

LOMOTIL®

Each tablet and each 5 cc. of liquid contains:

diphenoxylate hydrochloride ..... 2.5 mg.
(Warning: May be habit forming)
atropine sulfate ..... 0.025 mg.

tablets • liquid

slows propulsion

relieves distress

stops diarrhea

Precautions: Lomotil is an exempt narcotic preparation of very low addictive potential: more than three million prescriptions have now been written for Lomotil. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect—Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:

3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults:

20 mg. (2 tsp. 5 times daily or
2 tablets 4 times daily)

**Based on 4 cc. per teaspoonful.*

Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

University of Iowa
College of Medicine

Clinical Pathologic Conference

CLINICAL SUMMARY

A 72-YEAR-OLD WHITE FEMALE was admitted to the University Hospitals with a history of nausea, vomiting and diffuse abdominal pain of one day's duration. She had passed less urine than usual during that period, and had consulted her physician on the morning of her admission to the hospital. He found a lower midline abdominal mass, catheterized her, and obtained 70 ml. of urine. Thereafter, however, the mass did not disappear, and the physician had difficulty in irrigating the catheter. The patient said that prior to the onset of her present symptoms she had experienced no difficulty in voiding, and denied having had hematuria, pyuria, dysuria, chills, fever, flank pain or any changes in bowel habits. She had experienced gallbladder attacks in the past, and her present pain seemed similar in character to them. She had undergone a hysterectomy for unknown reasons at an unknown date.

On physical examination the patient was found to be dehydrated. Her blood pressure was 110/60 mm. Hg, her pulse was 100/min., and her body temperature was 98.2° F. Her breath was foul-smelling. The chest and heart were unremarkable. A midline infraumbilical scar was present. A firm, tender mass was palpable halfway between the symphysis pubis and the umbilicus. It felt slightly mobile and tender. Bowel sounds were present, and the mass was palpable on rectal examination. On pelvic examination the mass seemed unrelated to the adnexa. The uterus was absent. Soft, brown feces were present in the rectum. Laboratory findings included blood urea nitrogen 70 mg. per cent; and sodium of 128, chloride 90, CO_2 19.3, and potassium 4.2 mEq/L. The blood hematocrit was 48 per cent. Urinalysis showed a specific gravity of 1.030, a pH of 5, 2+ albumin, and negative glucose. The urine was grossly bloody. Excretory urograms showed normal bony structure with bilateral nephrograms at 5 minutes. The kidneys were of equal size, but there was no visualization of the collecting systems. Air and opaque cystograms showed a damaged bladder with no extrinsic pressure from the mass. Cystoscopy and bilateral retrograde pyelograms were carried out, and trabeculation and cellule formation were visualized in the bladder wall. No efflux of urine was seen from the ureteral orifices, and the ureteral catheters passed with ease to the renal pelvis. There was no evidence of obstructive uropathy. Retrograde pyelograms were interpreted as normal.

Because of the dehydration and the history of low urinary output, the patient was given intravenous saline and glucose, and the urinary output rose to 30 ml./hour. She was started on oxytetracycline hydrochloride (Terramycin), and seemed to stabilize overnight. However on the following morning her blood pressure had dropped to 86/40 mm. Hg, and her pulse had risen to 118/min. Her hematocrit at that time was 44 per cent. In the right groin a mass was palpated which had not been noted previously. Medical and surgical consultants were called, but before anything further could be done the patient expired with a terminal emesis of fecal material.

CLINICAL DISCUSSION

Dr. D. A. Culp, Urology: Mr. Boone will discuss the case for the students.

Mr. P. Boone, junior ward clerk: When a patient presents with an unexplained abdominal mass, consideration must be given to tumors of uterine, ovarian, renal, intestinal and retroperitoneal origin.

In this patient we can rule out a uterine mass because of the history of hysterectomy and its verification by pelvic examination. The protocol does not say whether her hysterectomy had included removal of the ovaries, but even so, our group feels that an ovarian mass can be ruled out on the basis of the pelvic examination, since the mass was not related to the adnexa and because it was in the midline.

The next consideration is a renal mass. The patient denied urinary symptoms but had noticed a decrease in urine output for one day. The location of the mass, the intravenous pyelograms and the retrograde pyelograms ruled out kidney origin. Although the patient had bloody urine after admission to the hospital, she experienced hematuria only after catheterization by her physician. The

history suggests trouble in catheterization, and that may have been the cause of that difficulty. A lower midline mass suggests a tumor of the bladder. But again, retrograde pyelograms and cystograms suggested no obstruction, and no mass was found in the bladder itself on cystoscopy. The cystograms indicated only a damaged bladder. Our group does feel that the renal system was abnormal, with 2+ albumin in the urine and with delayed function. Although these findings indicate possible parenchymal damage of the kidney and obstruction of the bladder, we feel that these couldn't have been the primary cause of the patient's acute state. Since the renal output increased with forced fluid, the kidneys were able to function and to concentrate. But the shock-like condition of the patient suggests that renal shutdown was probably present.

No mention of pulsation is made in the protocol; therefore, we feel that an aortic aneurysm was unlikely.

From the beginning, the gastrointestinal system was involved. Our group feels that the vomiting caused dehydration. With the decrease of sodium and chloride, the increased BUN, and a hematocrit of 48, we feel that a small-bowel obstruction was present. In low-bowel obstruction, the vomiting is often late and of mild degree so that body chemistries are not greatly influenced. Also, small-bowel obstruction starts with vomiting of gastric contents and later of fecal material, as was the case in this patient.

Next we must consider what caused the obstruction. Because of the presence of a lower-abdominal mass, we feel it was extrinsic in origin. X-rays would help locate the site of obstruction and possibly the cause of obstruction. A good possibility is a retroperitoneal tumor. The early symptoms are often insidious. This can be due to mechanical pressure on the intestine, or partial obstruction of the vessels of the intestine, interfering with normal digestive processes. Gastrointestinal and renal x-rays are important in the diagnosis of such a tumor. We do not have GI x-rays, but we have renal ones, and they show no obstruction or displacement of ureters. This finding does not rule out a retroperitoneal mass, however. The complications of such tumors are intestinal obstruction, peritonitis, intra-abdominal rupture, hemorrhage and metastases. In this patient, we feel that one or a combination of such complications produced shock. The shock could have been occasioned by the lowering of fluid and electrolytes alone, or by erosion of mesenteric vessels and hemorrhage. Or, a combination of mesenteric vessel occlusion and shock could have resulted.

In summation, our group feels the acute condition in this patient was produced by a retroperitoneal mass, most likely a lymphosarcoma. The mass then obstructed the small intestine by shutting off intestinal blood supply or by mechanical obstruction. This situation was complicated at the end by shock, due either to the obstruction itself or to erosion of blood vessels.

Dr. Culp: Thank you. I have asked Dr. Flocks to discuss this case.

Dr. R. H. Flocks, Urology: The most important point, as I reviewed the protocol, was the fact that this lady was apparently quite well until 24 hours prior to her admission. She had no loss of weight, and indeed had no evidence of any problem whatsoever until this affair started. Those facts would make it unlikely, for example, that a retroperitoneal tumor or something of that type had created a situation which gradually undermined her system and finally produced some kind of acute emergency. She apparently had no urinary-tract symptoms, no gastrointestinal symptoms, no symptoms of any real disease (except possibly the evidences of old age) until 24 hours prior to her entrance. Then she suddenly had diffuse abdominal pain with nausea and vomiting, and simultaneously an abdominal mass appeared which she had not noticed previously. At the same time, symptoms suggestive of shock and a very markedly lowered output of urine occurred.

Acute retention of urine, especially in a female, is a relatively uncommon cause of obstruction, and would not occur suddenly unless she had bilateral ureteral stones, one kidney with ureteral stones, or something of that sort. They might be associated with acute abdominal pain and might be associated with nausea, vomiting and a lowered output of urine. But when the doctor catheterized her, he did find some urine, and later when she entered this hospital, cystoscopy and retrograde pyelography showed no obstruction and a relatively normal anatomy, as far as the urinary tract was concerned.

So what could cause this sudden marked oliguria without obstruction to the outflow of urine? There was no anatomical disturbance of the urinary tract. Sudden shock associated with an acute abdominal emergency of some sort could produce this marked oliguria. Also, the loss of fluid by nausea and vomiting and possibly a loss of fluid into an acutely obstructed gastrointestinal tract could cause a marked oliguria. Urological examination when she entered the hospital ruled out the urinary tract as a cause of the mass. The fact that there was no displacement of the ureters or kidneys would tend to rule out a retroperitoneal cause for the abdominal mass. Although there are retroperitoneal lesions of fairly good size which might grow between the ureters (some lymphosarcomas might do this), still the absence of ureteral displacement would tend to rule this out. Therefore, the abdominal mass was a lesion associated with so-called intra-abdominal organs, the organs which for the most part lie inside the peritoneal

cavity. Also this mass seems to have appeared suddenly, and its appearance was associated with marked shock. One possibility is a twisted ovarian cyst. However, the lesion was higher up. Therefore, we must give some thought to a twisted mesenteric cyst, a volvulus, or a carcinoma which had grown on the silent side of the bowel, with intussusception. The patient had undergone a previous operative procedure. She might have had adhesions in the lower part of the abdomen and a consequent intra-abdominal hernia of some sort, producing a mass and acute intestinal obstruction accompanied by an outpouring of fluid and endotoxins into this acutely obstructed bowel and the shock secondary to this.

It would seem, therefore, that there was a real problem here as far as therapy was concerned. As soon as the urinary tract had been ruled out, there was an urgent need to correct the acute intestinal problem which had been the primary underlying cause of the oliguria and the shock. This creates a real dilemma as to when to explore and how long to continue supportive therapy. Should one go right in to find out what has produced the abdominal mass, and if it is an acute obstruction, do something about it? Or should one first support the patient? Apparently it was felt wise to support the patient, since she apparently was very ill. At any rate, I think the cause was probably something acute, producing bowel strangulation possibly associated with adhesions or possibly associated with some silent tumor or an internal hernia, rather than a slow-growing retroperitoneal tumor which had eroded a blood vessel or something of that nature.

Dr. Culp: Thank you, Dr. Flocks. Dr. Keller, will you show us the roentgenograms at this time? Even though they were reported as normal, I think we should see them if we are to follow the developments in this case. The physicians were particularly worried about the low urinary output. The question of urinary-tract disease certainly was entertained, for the patient was sent to the Department of Urology with a question regarding possible suppression or retention of urine, and perhaps these roentgenograms will help with this point.

Dr. J. T. Keller, Radiology: The first is a 30-minute film of a pyelogram. It does not show much in the way of calyceal detail, but we do have a bilateral nephrogram showing normal renal outlines. The bilateral retrograde study showed good visualization of the pelvis and calices on the left, and partial visualization on the right. The urinary bladder was quite small and trabeculated, but otherwise appeared to be normal. As a part of the retrograde study, both pelvis and calices were well demonstrated bilaterally and appeared to be within normal limits. The kidneys were somewhat small, but for a woman of her size and age, they probably were not remarkable. There was a small amount of small-bowel gas. I believe these were the only findings of any significance.

Dr. E. E. Mason, Surgery: Is that a bubble in the stomach or is that another segment of bowel?

Dr. Keller: That, I believe to be stomach.

Dr. S. E. Ziffren, Surgery: Is that a dense shadow in the pelvis pushing over the bowel? On the left side, pushing the bowel over to the right.

Dr. Keller: I don't think I'd call that anything.

Dr. Culp: Are there any further questions?

Dr. J. A. Gius, Surgery: Are the ureters normal?

Dr. Keller: Yes.

Dr. D. Dunphy, Pediatrics: As I read the protocol, there is one big question that comes to mind. First, here is a lady who has gone from a presumably normal sodium one day to a level of 128 mEq/L. Secondly, I should expect a 72-year-old woman to have a hematocrit of around 39 or 40 per cent or even less, but she had one of 48 per cent. There is no comment on how dehydrated this woman was. What was her clinical state?

Dr. Culp: She was markedly dehydrated, and was moribund at the time of her admission.

Dr. Mason: Whether oliguria is due to damage to the kidney from shock or is due to simple dehydration is not a question that is usually solved by getting an intravenous pyelogram. But would attempting an intravenous pyelogram and getting a nephrogram suggest that the kidney is not severely damaged? Perhaps it was just dehydration. Would you expect a severely damaged kidney to concentrate enough dye to give a nephrogram?

Dr. Flocks: The fact that this kidney produced a nephrogram, and then began to put out 30 cc. per hour as soon as the patient began receiving fluids would seem to indicate that her kidneys were not damaged. Rather, it would suggest, because of the low blood pressure, that not enough pressure was present to push the urine through, and that she didn't have enough fluid.

Dr. Dunphy: Couldn't you guess this from the specific gravity of 1.030?

Dr. Culp: Perhaps, when the attending physicians saw a nephrogram on the excretory urogram, the possibility which arose in their minds was that of a supravesical obstruction. That was the reason for the retrograde pyelogram. The absence of urine in the bladder, with a nephrogram effect, raises the question of whether the delay might have been occasioned by an obstruction to both ureters somewhere above their intramural position. You could have a nephrogram effect with that type of a lesion.

Dr. M. P. Jones, Internal Medicine: I'd like to ask Dr. Flocks what he thinks of that abdominal mass in the right side.

Dr. Flocks: I didn't say anything about it because it hadn't been described very accurately in the protocol. Was it a femoral hernia, an inguinal

hernia associated with retention, or a solid mass? I don't know. I assume that it might have been a hernia.

Dr. Culp: I can't give you any further information, for no more is available to us. This mass appeared on the morning following admission, and the patient had a very marked hypotensive episode within a short period after the mass was noted, and within an hour she was dead. However, those occurrences should not have prevented a more accurate description of it.

Dr. Davis, will you give us the findings at postmortem examination?

Dr. J. R. Davis, Pathology: The principal finding at necropsy was an acute intestinal obstruction produced by a volvulus. The distal jejunum and the proximal ileum were involved in the volvulus. The strangulated loops of bowel were dilated, thin-walled and purplish-red. They were adherent with both fibrous and fibrinous bands, and in the right lower quadrant the fulcrum of the volvulus was a fibrous band that probably was a result of the previous pelvic surgery. The discolored segments of small intestine showed hemorrhagic necrosis with no conspicuous putrefaction. The proximal alimentary tract was dilated and pale. The stomach contained 300 cc. of brown, fecaloid fluid, and the esophageal mucosa was eroded and ulcerated. There was an acute bacterial peritonitis, with coliform bacteria present in the culture. Both gutters were filled with sanguineous purulent exudate, and exudate was present on serosal surfaces. The right groin hernia was a 3.5 by 1.5 cm. mass of incarcerated and infarcted omentum. No bowel was present in the femoral hernia.

There was an aspiration pneumonitis. The lungs were heavy and showed dependent zones of brownish-red discoloration, consolidation and necrosis. Microscopically, there was evidence of fresh putrefactive pneumonitis, with little inflammatory response. The incidental findings of patchy subendocardial hemorrhage and early renal-tubular degenerative changes were considered terminal events and secondary to shock. An interesting incidental finding was a carcinoma of the cervical stump. Although grossly the cervix appeared normal, microscopically the stump showed nests of epidermoid carcinoma which were confined to the cervix. Carcinoma is more prevalent in cervical stumps than in the general population of cervices.

In summary, this woman had acute intestinal obstruction from volvulus formation secondary to peritoneal fibrous bands. The cause of death was shock secondary to the strangulating intestinal obstruction, with aspiration pneumonitis and acute peritonitis.

Dr. E. L. DeGowin, Internal Medicine: How did blood get into the urine?

Dr. Davis: There was chronic cystitis with the occurrence of trabeculation. There were patchy areas of fresh erosion, apparently on the basis of catheterization. Except for a mild degree of early renal degeneration, the kidneys showed no significant abnormality.

Dr. W. B. Galbraith, Internal Medicine: Was the gallbladder normal, Dr. Davis?

Dr. Davis: Yes, the gallbladder was normal. Not only the corpus of the uterus, but both fallopian tubes and ovaries were absent.

Dr. Culp: Are there any other questions?

Dr. R. T. Soper, Surgery: I'd like to ask Dr. Flocks how a patient could be dehydrated enough to have a high hematocrit reading, yet could also have a very low serum sodium and chloride?

Dr. Flocks: She had been vomiting for 24 hours.

Dr. Culp: Are there any other questions? Dr. Mason, would you care to discuss this patient from the standpoint of an acute abdominal emergency and from the standpoint of the management of fluids and electrolytes?

Dr. Mason: Death in mechanical bowel obstruction is usually due to extracellular-fluid deficiency, with an added endotoxic type of terminal shock. If treatment is begun late, the administration of sufficient water and electrolytes to correct the calculated deficit may not restore a normal circulation. The treatment of endotoxic shock requires large doses of steroids, additional plasma, and human serum albumin (with control by monitoring the venous pressure), specific antibiotics, and, of course, correction of the basic underlying cause of the bowel obstruction and the absorption of endotoxin.

Parenthetically, I should like to remind you of the ulceration of the mucosa in the bowel which you saw in the slides. I think it is easy to see how endotoxins and bacteria can be absorbed from such a bowel segment. With a lethal dose of endotoxin and with prolongation of circulatory insufficiency, the chances for the patient's recovery become slight, regardless of the treatment. There are some people who think that all forms of shock end up this way—that shock due to absorption of endotoxins is the end result of hemorrhagic shock or traumatic shock.

This patient had probably been obstructed at least three or four days by the time she died, as was evidenced by the fecal vomiting. It takes about that long for enough putrefaction to occur so that the contents of the upper gastrointestinal tract become fecal. Some people, thinking the fecal material comes from the colon, have the misconception that such vomiting signifies a low obstruction. Fecal vomiting can occur with obstruction of the outlet of the stomach, provided that the fluid in the obstructed area has been retained long enough for it to become fecal.

The vomiting, the oliguria, the severely dehydrated appearance, the hypotension, tachycardia, foul-smelling breath, and abdominal mass—all

of these at the time of the patient's admission suggested bowel obstruction and indicated a probable extracellular-fluid deficit. The size of the patient and the size of the deficit are open to speculation. If she weighed about 50 Kg., then it would require about 3½ liters of isotonic saline and sodium lactate to correct a hyponatremia of 10 per cent. That was about the amount of the dilution of sodium chloride and CO_2 in this instance. This calculation is made on the basis of a pure salt deficiency such as might occur if the patient vomited electrolyte solution and drank water, thus ending up with a pure salt deficit. This is something that Marriott wrote about in one of the first little books on fluid and electrolyte balance, and it is still pure gold. It is a book which I suggest that you read. A 10 per cent deficit in this patient might have amounted to about 3½ liters of extracellular fluid, and since that deficit in volume of extracellular fluid would also involve the vascular compartment, and since there would be no loss of red cells, one would expect the hematocrit to be above normal.

The response of this patient to treatment, with a prompt return of renal function, suggests that correction of fluid and electrolyte imbalance was carried out in a propitious manner. I should guess that deterioration and death were due to absorption of material from the obstructed bowel.

These patients require careful timing. They are poor operative risks. Decompression with a long intestinal tube is life-saving at times, but it has its own risks. The chief risk is further delay in recognizing a closed-loop obstruction or a strangulating obstruction which must be treated by operation. That's what this patient had—a closed-loop obstruction. Since an operation is an important but risky part of the treatment, the surgeon must plan the operation so as to make it coincide with rehydration and good circulation. He must not delay so long as to allow irreversible shock to remove his problem. Suction treatment for decompression is an important part of preparation for an emergency operation, and like the restoration of electrolytes and water, it will improve the surgeon's and the patient's chances of success. Often, a delay in treating mechanical bowel obstruction by appropriate operative means hinges upon someone's failing to sit at the bedside with his stethoscope upon the patient's abdomen. Until he hears the high-pitched pings of fluid and air squirting back through an area of constriction, the peculiar borborygmi which are associated with release of pain are pathognomonic for mechanical bowel obstruction. Once these typical sounds are heard, the diagnosis is made and one can proceed with the necessary operation. Roentgenography alone will not provide the necessary information on which to make a diagnosis of mechanical bowel obstruction. And in a closed-loop obstruction, it may give no help whatsoever. If the closed loop has no air within it, the patient can die from this obstruction before the diagnosis can be made by x-ray.

Dr. Culp: Are there any further questions at this point?

Dr. Dunphy: Would Dr. Mason comment on the value of an upright film?

Dr. Culp: Maybe Dr. Keller would like to answer that question. Of what value would an upright film be in the differential diagnosis?

Dr. Keller: When an upright film shows loops of air-and-fluid-filled small bowel and a fluid level in two sides of one loop, and when the fluid is at the same height on both sides, the difficulty is more likely to be a paralytic ileus than a mechanical obstruction. Fluid at different levels in portions of the same loop, we feel is more indicative of mechanical obstruction.

Dr. Flocks: Dr. Mason emphasized something which I should like to comment upon. The most important factors here were the timing and the recognition that an acute abdomen was present. Once it became clear that the urologic system was not the source of this mass, the case was a real emergency and something should have been done about it.

Dr. Dunphy: Dr. Mason, did you suggest that the total fluid with normal sodium chloride is 155 mEq/L? Is this what you were suggesting? I calculated it, and it seemed to be a little high over her total deficit of sodium.

Dr. Mason: I was just trying to illustrate the same thing you brought out, that if a patient vomits electrolyte solution, drinks water and ends up with a pure sodium deficit, he will have a deficit of extracellular fluid and hemoconcentration. This gives one a basis for estimating the extent of the replacement required. There are some presuppositions here, beginning with the difficulty of making a diagnosis of volume abnormality when all you have to work with are concentrations of sodium and red blood cells, but one can figure out what volumes are required to restore concentration to normal levels. One can calculate it on the basis of changing the sodium back to normal, or changing the hematocrit back to normal, or both.

Dr. Culp: From the late afternoon when this patient arrived until the following morning, she received 4,000 cc. of saline and sodium lactate. The reason for not proceeding immediately with an operative procedure was the moribund state of the patient. The attending physicians waited too long trying to improve her condition.

ANATOMICAL DIAGNOSES

1. Volvulus, small bowel, with obstruction and early hemorrhagic infarction, secondary to fibrous adhesion
   a. Peritonitis
   b. Aspiration pneumonitis

2. Femoral hernia containing infarcted omentum, right
3. Epithelial degeneration, renal tubules
4. Cardiomegaly with left ventricular hypertrophy, myocardial fibrosis and focal subendocardial hemorrhages.
5. Atherosclerosis, generalized, moderate
6. Fatty metamorphosis, liver
7. Epidermoid carcinoma, stump of cervix uteri, early
8. Supracervical hysterectomy and salpingo-oophorectomy, remote
9. Chronic cystic mastitis
10. Chronic cystitis

STUDENTS' DIAGNOSIS

Retroperitoneal mass, probably lymphoma, with obstruction of small intestine mechanically or from interruption of blood supply, resulting in shock.

DR. FLOCKS' DIAGNOSIS

Intestinal obstruction with strangulation due to
a. adhesions or
b. internal hernia or
c. tumor

AMA Clinical Convention in Philadelphia

A comprehensive scientific program, a new postgraduate course and special clinical workshops are to be some of the features of the AMA's 19th Clinical Convention, November 28-December 1, in Philadelphia.

An outstanding scientific program is designed to hold special interest for the practitioner. Some of the topics: ulcerative colitis, gram-negative bacterial infections, a medical-surgical review of cardiovascular surgery, drug therapy in rheumatology, and cancer chemotherapy and preventive surgery.

Clinical workshops on diabetes, examination of the heart, management of common eye problems, and the solution of selected diagnostic and therapeutic problems will be conducted by outstanding teachers. The new course will be one in cardiovascular therapeutics. It will be offered in addition to the popular course on gynecology and obstetrics begun at the clinical convention last year in Miami.

The annual AMA conference on the medical aspects of sports will be held the first day of the meeting, November 28, in the Benjamin Franklin Hotel. It will be of special interest to high school and college team physicians.

Twelve fireside conferences will be held Sunday evening, November 28, at the Warwick Hotel, in cooperation with the American College of Chest Physicians.

Cystic Fibrosis

Blowing up balloons, singing, and playing wind instruments are all forms of treatment recommended by a University of Iowa pediatrician for youngsters suffering from a hereditary disease known as cystic fibrosis. These activities—each of which involves deep breathing—help to prevent clogging of the respiratory tract by mucus, a hazard encountered by many patients suffering from cystic fibrosis.

Treatment of the disorder was discussed at a pediatrics postgraduate conference in Iowa City on September 21 by Dr. Robert D. Gauchat, an associate professor of pediatrics at the U. of I. He explained that in cystic fibrosis, abnormally thick and sticky secretions are produced by many tissues and organs of the body. Symptoms usually involve the nose and sinuses, the lungs, and the gastrointestinal tract, including the pancreas. Thick mucus in the bronchial tubes impedes breathing and makes the patient very susceptible to pulmonary infections.

When the disorder affects the pancreas, this gland becomes clogged and unable to produce sufficient amounts of digestive chemicals. As a result, digestion and absorption of food are decreased.

Another serious aspect of the condition is the tendency of affected infants and children to lose very large amounts of body salts in perspiration. During summer months especially, these children may lose enough salt from the body to cause heat prostration.

Dr. Gauchat estimated that about 27 of the 54,000 babies born in Iowa this year will have cystic fibrosis. "The condition can be diagnosed with nearly 100 per cent certainty by measuring the concentration of salt in the infant's sweat."

Treatment, which must be closely supervised by a physician, involves proper diet to maintain nutrition, replacement of absent pancreatic enzymes, salt supplements, the prevention and control of pulmonary infections, and often the use of respiratory inhalation machines to assist in the removal of mucus plugs from bronchial tubes.

Dr. Gauchat said that a child with cystic fibrosis may have an adjustment problem when he enters school. Health officials must explain the nature of this disorder to school authorities so as to make the child's entry into school as easy as possible.

Often the youngster will cough a great deal. Teachers must understand that his disease is not contagious and that he will not transmit an infection to other students, Dr. Gauchat said.

Coming Meetings

IN STATE

Oct. 1 — **Otolaryngology for the General Practitioner,** University of Iowa College of Medicine, Room E-331, Medical Amphitheater, University Hospitals, Iowa City.

Oct. 2-3 — **Postgraduate Course on Radiology,** University of Iowa College of Medicine, University Hospitals, Iowa City.

Oct. 13-15 — **52nd Annual Conference,** Mississippi Valley Conference on Tuberculosis and Mississippi Valley Thoracic Society, Hotel Savery, Des Moines.

Oct. 15-16 — **Postgraduate Course in Orthopedics,** University of Iowa College of Medicine, Room E-331, Medical Amphitheater, University Hospitals, Iowa City.

Nov. 13 — **Mercy Hospital Medical Day,** Des Moines.

CONTINENTAL U. S.

Oct. 2-3 — **National Congress on Medical Ethics and Professionalism,** Drake Hotel, Chicago, Illinois.

Oct. 4-6 — **43rd Annual Fall Conference, Kansas City-Southwest Clinical Society,** Muehlebach Hotel, Kansas City, Missouri.

Oct. 7-9 — **Fall Meeting of The American College of Physicians,** Deauville Hotel, Miami Beach, Fla.

Oct. 8-9 — **Western Industrial Medical Association,** San Francisco Hilton Hotel, San Francisco, California.

Oct. 9 — **Drug Information Association,** Marriott Twin Bridges Motor Hotel, Washington, D. C.

Oct. 9-13 — **American Society of Clinical Hypnosis,** Sherman House, Chicago, Illinois.

Oct. 10 — **Annual Scientific Meeting, American College of Nutrition,** Americana Hotel, New York City, New York.

Oct. 10-14 — **Western Orthopedic Association,** Hotel Utah, Salt Lake City, Utah.

Oct. 11-13 — **Annual Meeting, Academy of Psychosomatic Medicine,** Sherman House, Chicago, Illinois.

Oct. 11-13 — **Hospital Medical Staff Conference,** University of Colorado School of Medicine, YMCA Conference Center, Estes Park, Colo.

Oct. 11-14 — **Second Postgraduate Course on Fractures and Other Injuries,** Committee on Injuries of the American Academy of Orthopaedic Surgeons, Riviera Motel, Atlanta, Ga.

Oct. 11-15 — **Morphologic Biochemical and Clinical Aspects of Hepatic Disease,** The American College of Physicians, Chicago Medical School, Mount Sinai Hospital, Chicago, Illinois.

Oct. 11-16 — **Postgraduate Conference for the Hospital Medical Staff,** YMCA Conference Center, Estes Park, Colorado.

Oct. 12-14 — **Annual Congress on Occupational Health,** Murat Temple, Indianapolis, Ind.

Oct. 13-14 — **The Clinical Application of Current Concepts in Renal Pathophysiology,** University of Wisconsin, Madison, Wisconsin.

Oct. 14 — **Symposium on Suicide,** George Washington University School of Medicine, Lisner Auditorium, Washington, D. C.

Oct. 14-16 — **American Association for Surgery of Trauma,** Warwick Hotel, Philadelphia, Pa.

Oct. 14-16 — **American Academy of Neurological Surgery,** Terrace Hilton Hotel, Cincinnati, Ohio.

Oct. 14-16 — **Conference on Medical Education in the Hospital,** University of Colorado School of Medicine, YMCA Conference Center, Estes Park, Colo.

Oct. 14-16 — **American College of Obstetricians and Gynecologists District III Meeting,** Pittsburgh Hilton, Pittsburgh, Pa.

Oct. 15-17 — **American Heart Association,** Americana Hotel, Bal Harbour, Florida.

Oct. 16 — **Midwest Regional Meeting of American College of Physicians,** Wisconsin Union Theater, Madison, Wisconsin.

Oct. 17-21 — **Fourth International Congress on Chemotherapy and Fifth Interscience Conference on Antimicrobial Agents & Chemotherapy,** Shoreham Hotel, Washington, D. C.

Oct. 18-21 — **18th Annual Postgraduate Seminar,** Illinois Academy of General Practice, Sherman Hotel, Chicago, Illinois.

Oct. 18-21 — **51st Annual Clinical Congress of the American College of Surgeons,** Shelburne Hotel—headquarters, Convention Hall—Scientific Sessions, Atlantic City, New Jersey.

Oct. 18-22 — **American Association of Public Health Physicians,** Conrad Hilton Hotel, Chicago, Illinois.

Oct. 18-22 — **The Rheumatic Diseases: Pathology, Diagnosis and Treatment,** The American College of Physicians, Robert B. Brigham Hospital, Boston, Mass.

Oct. 18-22 — **Clinical Application of Cardiopulmonary Physiology,** American College of Chest Physicians, Knickerbocker Hotel, Chicago, Illinois.

Oct. 22-23 — **American Association of Automotive Medicine,** Mayo Clinic, Rochester, Minnesota.

Oct. 23 — **Missouri Regional Meeting, American College of Physicians,** St. Louis, Missouri.

Oct. 23-27 — **California Academy of General Practice,** Statler Hotel, Los Angeles, California.

Oct. 23-27 — **American Society of Anesthesiologists,** Denver Hilton Hotel, Denver, Colorado.

Oct. 23-28 — **34th Annual Meeting,** American Academy of Pediatrics, Palmer House, Chicago, Illinois.

Oct. 24-27 — **American Clinical and Climatological Association,** Williamsburg Inn, Williamsburg, Virginia.

Oct. 24-27 — **American College of Obstetricians and Gynecologists, District VIII Meeting,** Sahara Hotel, Las Vegas, Nev.

Oct. 24-28 — **American Fracture Association,** Riviera Hotel, Las Vegas, Nevada.

Oct. 25 — **Eighth Annual Meeting, American Association of Poison Control Centers,** Palmer House, Chicago, Illinois.

Oct. 25-27 — **Molecular Biology: Its Implications for Modern Medicine,** The American College of Physicians, University of Chicago Center for Continuing Education, Chicago, Illinois.

Oct. 25-27 — **30th Annual Convention of the American College of Gastroenterology,** Americana Hotel, Bal Harbour, Fla.

Oct. 25-28 — **Omaha Mid-West Clinical Society Postgraduate Assembly,** Civic Auditorium, Omaha, Neb.

Oct. 27-29 — **American Cancer Society,** Biltmore Hotel, New York City.

Oct. 28-30 — **Annual Course in Postgraduate Gastroenterology of the American College of Gastroenterology,** Americana Hotel, Bal Harbour, Florida.

Oct. 28-30 — **American College of Obstetricians and Gynecologists District VI Meeting,** Kahler Hotel, Rochester, Minn.

Oct. 28-31 — **American College of Obstetricians and Gynecologists District V Meeting,** Hotel Cleveland, Cleveland, Ohio.

Oct. 29-30 — **M.D. Day at University Medical Center,** University of Missouri Medical Center, Columbia, Missouri.

Oct. 30-31 — **16th National Conference on Disaster Medical Care,** AMA, Drake Hotel, Chicago, Illinois.

Oct. 30-Nov. 5 — **Annual Otolaryngologic Assembly of 1965,** University of Illinois College of Medicine, Chicago, Illinois.

Nov. 1-4 — **Annual Meeting of Southern Medical Association Section of Ophthalmology,** Houston, Texas.

Nov. 1-5	**Psychiatry for the Internist—American College of Physicians**, University of Colorado Medical Center, Denver, Colorado.
Nov. 3-4	**American College of Clinical Pharmacology and Chemotherapy**, Knickerbocker Hotel, Chicago, Illinois.
Nov. 3-5	**New England Postgraduate Assembly**, Statler Hilton Hotel, Boston, Mass.
Nov. 3-6	**14th Annual Meeting of the American Society of Tropical Medicine and Hygiene**, Roosevelt Hotel, New Orleans, Louisiana.
Nov. 4-6	**47th Annual Meeting, Southwestern Medical Association**, Sheraton Motor Inn, El Paso, Texas.
Nov. 4-6	**American Society of Cytology**, Statler Hilton Hotel, New York, New York.
Nov. 5	**International College of Surgeons—Illinois Division Meeting**, Urbana, Illinois.
Nov. 8-11	**Western Hemisphere Congress on Nutrition, American Medical Association**, Chicago, Illinois.
Nov. 8-12	**Review of Advances in Internal Medicine, The American College of Physicians**, Kronish Auditorium, Maimonides Hospital of Brooklyn, 4802 Tenth Avenue, Brooklyn, New York.
Nov. 8-12	**Occupational Health for Nurses**, New York University Medical Center, New York.
Nov. 10-12	**Fractures and Joint Injuries**, University of Colorado School of Medicine, Denver, Colorado.
Nov. 11-13	**Inaugural Scientific Program** of the new Ancker Hospital (St. Paul-Ramsey Hospital), St. Paul, Minnesota.
Nov. 11-13	**Fifth Annual Milwaukee Medical Conference**, Coffey Auditorium, Milwaukee County Hospital, Milwaukee, Wisconsin.
Nov. 11-13	**Gerontological Society**, Ambassador Hotel, Los Angeles, California.
Nov. 12	**8th Annual Symposium on Diabetes**, Bigler Auditorium, Children's Memorial Hospital, Chicago, Illinois.
Nov. 12-13	**Society of Clinical Surgery**, Admiral Benbow Inn, Jackson, Mississippi.
Nov. 12-14	**Second Annual Conference on Respiratory Therapy**, Statler Hilton Hotel, Boston, Massachusetts.
Nov. 13-15	**Annual Meeting, Wisconsin Society of Pathologists**, Milwaukee, Wisconsin.
Nov. 14-19	**American Academy of Ophthalmology and Otolaryngology**, Palmer House, Chicago, Illinois.
Nov. 15-17	**72nd Annual Convention of the Association of Military Surgeons of the United States**, Washington Hilton Hotel, Washington, D. C.
Nov. 15-17	**Medical Society of District of Columbia**, Washington Hilton Hotel, Washington, D. C.
Nov. 15-18	**50th Annual Scientific Assembly, Interstate Postgraduate Medical Association**, Cleveland Auditorium and Sheraton-Cleveland Hotel, Cleveland, Ohio.
Nov. 15-19	**Diagnosis and Treatment of Diseases of the Heart and Lungs, American College of Chest Physicians**, Barbizon Plaza Hotel, New York City, New York.
Nov. 15-19	**16th Annual Meeting, Animal Care Panel**, Sheraton Hotel, Philadelphia, Pennsylvania.
Nov. 16	**Something About High Blood Pressure**, Holiday Inn, Kearney, Nebraska.
Nov. 17-20	**Postgraduate Course in Fractures and Other Injuries**, Marriott Motel Hotel, Dallas, Texas.
Nov. 17-20	**Third International Conference on Hyperbaric Medicine**, Duke University Medical Center, Durham, N. C.
Nov. 18-20	**Western Surgical Association**, Sheraton Fontenelle Hotel, Omaha, Nebraska.
Nov. 22	**Symposium on Clinical Aspects of Hodgkin's Disease**, New York Hilton Hotel, New York, New York.
Nov. 22-24	**15th Hahnemann Symposium, Cancer Chemotherapy: Basic & Clinical Applications**, Sheraton Hotel, Philadelphia, Pennsylvania.
Nov. 27-28	**Interim Meeting, American College of Chest Physicians**, Philadelphia, Pennsylvania.
Nov. 27	**Seventh Annual Conference on Medical Services**, Bellevue Stratford Hotel, Philadelphia, Pennsylvania.
Nov. 28	**Seventh National Conference on Medical Aspects of Sports**, Philadelphia, Pennsylvania.
Nov. 28-Dec. 1	**19th Clinical Convention, American Medical Association**, Philadelphia, Pennsylvania.
Nov. 28-Dec. 3	**Radiological Society of North America**, Palmer House, Chicago, Illinois.
Nov. 29-30	**Symposium on Biochemical and Pharmacological Aspects of Basal Ganglia Disease**, Columbia University College of Physicians & Surgeons, New York.
Nov. 29-Dec. 1	**American Electroencephalographic Society**, Americana Hotel, New York.

ABROAD

Oct. 5-9	**18th International Tuberculosis Conference**, Munich.
Oct. 5-9	**Fourth International Congress of Infectious Pathology and Parasitology**, Freiburg, Germany.
Oct. 24-30	**Eighth Quadriennial International Congress of Otorhinolaryngology**, Tokyo, Japan.
Nov. 7-13	**Eleventh Triennial International Congress of Pediatrics**, Tokyo, Japan.

Mississippi Valley Thoracic Society

HOTEL SAVERY, DES MOINES

Friday, October 15

9:00 a.m. "Chemotherapy of Tuberculosis: Problems in Retreatment"—Abraham Falk, M.D., Minneapolis

9.30 a.m. "Comparison of Cultures of Induced Sputum and Gastric Washings in the Diagnosis of Tuberculosis"—David T. Carr, M.D., Alfred G. Karlson, M.D., and George D. Stilwell, M.D., Rochester, Minnesota

9:50 a.m. "Present Status of 'Open Negative' Cavities Due to Photochromogenic Mycobacteria Among Cooperative Patients Discharged With Consent"—Karl H. Pfuetze, M.D., Hinsdale, Illinois

10:10 a.m. "Therapy of Emphysema"—Edna M. Cree, M.D., Madison

10:45 a.m. PANEL: CURRENT USES OF TECHNICS FOR ASSISTING OR CONTROLLING RESPIRATION—Wm. K. Hamilton, M.D., Iowa City; Edna M. Cree, M.D., Madison; David W. Cugell, M.D., Chicago; and Edward P. Didier, M.D., Rochester, Minnesota

1:45 p.m. BUSINESS MEETING

2:00 p.m. "Newer Developments in the Epidemiology of Histoplasmosis"—Fred E. Tosh, M.D., Kansas City, Kansas

2:30 p.m. "What Is Intrinsic Bronchial Asthma?"—Paul M. Seebohm, M.D., Iowa City

3:00 p.m. "Pulmonary Surfactant"—Douglas T. Coles, M.D., Rochester, Minnesota

3:45 p.m. PANEL: PUZZLING PULMONARY PROBLEMS: A SERIES OF INTERESTING CASES—Ian M. Maclean, M.D., Iowa City; Helen A. Dickie, M.D., Madison; Ben R. Lawton, M.D., Marshfield, Wisc.; David T. Carr, M.D., Rochester, Minn.; and Harry W. Fischer, M.D., Iowa City

"The Organization and Effectiveness of a Smoking-Withdrawal Clinic"—Charles A. Ross, M.D., Buffalo, New York.

Editorials

A "NEW" IDEA

It is indeed refreshing when a new idea appears in the medical literature. Whether the idea "pans out" is of little concern. The fascinating thing is that American free enterprise can still develop new ideas. Let us hope that such innovations continue under Medicare.

Hyperbaric-oxygen therapy has helped some individuals suffering from infections caused by organisms that prefer to live at low oxygen pressures, but in the treatment of such diseases it is still a cumbersome "toy."

Wildermuth, however, has described its practical possibilities in the supplementation of radiation therapy for the treatment of cancer. In a recent article,* he says that the individual to be treated is placed in a tank similar to an "iron lung," and he then is surrounded by oxygen at increased pressure and is given radiation therapy. Such a method, if fruitful, would be simple as well as practical.

The theory behind the use of hyperbaric oxygen in cancer therapy is imbedded in the foundations of radiation chemistry, radiation physics and radiation biology. In the presence of oxygen, one might expect an increased effectiveness of radiation on the pathologic cell. More ionization occurs, and the disruptive effect of the radiation on the chromosomes is of a more permanent nature. Contrariwise, there is a ceiling above which an increase in oxygen content of the atmosphere does not further enhance the radiation effect, so that normal cells will not be further damaged. Only the cells lacking in blood supply (the cancer cells) will be affected. Oxygen diffusion is insufficient to sustain life of a cell beyond a cell-mass thickness of 200 microns. Henry's law states that the solubility of oxygen (or of other gases) in a fluid (in this case plasma) increases with the pressure of the gas. In a hyperbaric chamber, the partial pressure of oxygen (PO_2) in the antecubital vein may rise from 40 to 1,600 mm. Hg. Therefore Wildermuth can summarize: "(1) Anoxia results from cancer overgrowth. (2) Anoxic cells are relatively radio-resistant. (3) Anoxia may be overcome by hyperbaric oxygen. (4) Hyperbaric oxygen does not increase radio-sensitivity of tissues at normal venous PO_2 or above."

Several types of tumors, including malignant melanomas, lymphomas and pancreatic carcinomas, are being studied at present. The National Cancer Institute is currently offering grants for the study of this promising field of tumor destruction.

The hyperbaric oxygen chamber-radiation technic seems to offer a promising breakthrough in our attempts to kill the cancer cell without excessively damaging the normal host cell. Full steam ahead!

—*Daniel A. Glomset,* M.D.

PRACTICAL CONTROL OF HOME MEDICATION

Headache? Itching? Run-down? Sniffles? Rheumatism?—There is help for you. Your friends, your grocer, your neighbor—almost anyone you may approach can give you advice on some favorite medication for your particular type of ailment. In contrast to other countries, most American states and our federal government provide the public with legal protection against fraudulent "remedies," but what of the many medicines that can lawfully be sold to the public without prescription? How can people best be helped to use them wisely? These were the topics for a symposium conducted recently by the New York Academy of Sciences.*

Self-medication dates from antiquity, for whenever people have felt sick, they have tried to do something for themselves. Experience taught them that certain procedures or the use of certain substances brought them relief. Some of those discoveries have reached the scientific stage, and are now accepted as proper medical treatment. The histories of opium, cascara bark, cocaine (coca leaves), cinchona bark and, more recently, antibiotics abound in folklore and tales of self-medication.

Unfortunately, with modern technology and the development of current advertising methods, people are being persuaded to purchase useless and sometimes dangerous medications for use without competent medical advice. The impulse toward self-medication will persist, and despite governmental limitations the sick will seek materials with which to treat themselves. Who, then, can best protect people against themselves?

It has been suggested that drug manufacturers should assume the responsibility. They should provide full and honest information in all of their advertising, as well as on their packages. Such "full disclosure," coupled with constructive education, could benefit the public more than laws that cannot be enforced. Sales, of over-the-counter medications totaled $1,899,960,000 in 1963, as compared with $2,618,300,000 for prescription medications. Self-medication is here to stay, and a real-

* Wildermuth, O.: Case for hyperbaric oxygen radiotherapy. J.A.M.A., **191**:986-990, (Mar.) 1965.

* Conference Report: Home medication and public welfare. ANN. NEW YORK ACAD. SCI., **120**:807-1024, (July 14) 1965.

istic approach must be found if it is to be controlled.

The conclusions voiced by the conference chairman, Chester S. Keefer, M.D., are justified: "Home medication is useful, satisfies a public need and a public demand and renders a public service. . . . Home medication is usually employed to improve personal hygiene and to relieve those conditions that can be effectively and safely self-diagnosed and treated by a layman. . . . The use of home medication plays a role in the protection of health, and supplements all other forms of treatment in health improvement. In this way, it adds to the well-being of the public."

—*Marion E. Alberts,* M.D.

SAFER AUTOMOBILES

Safety experts and medical men have long been anguished by the automobile manufacturers' apparent disdain for safety features and designs. Actually, the modern automobile has many dangerous features. These include sharp-edged dashboards, thick door posts that limit visibility, seats which are inadequately attached, long steering columns which can be driven into a driver's chest, perennial door-latch failures, etc. One might expect that the design of today's automobile would be a safety engineer's triumph, with safety features undreamed-of yesterday. Such is not the case.

Why is it that the automobile manufacturers continue to produce automobiles with a persistent paucity of safety features? The answers are *competition* and *cost of production.* Competition forces the manufacturers to consider customer acceptance of their designs, rather than customer safety. Cost of production limits the manufacturer's designs. A safety feature costing an extra dollar becomes a tremendous cost item when thousands of automobiles are made every week.

How, then, can safer automobiles be designed and marketed? Some say that Congress should pass laws forcing manufacturers to build safer automobiles. The Roberts Committee has already proposed that the government purchase only automobiles which meet certain safety standards. However, the implementation of that proposal would require establishing standards, and testing and certifying every new model of automobile.

A better answer to the problem is to publish the safety rating of every make of automobile. The safety rating would affect the consumer's decision when he considered purchasing a new car. The automobile manufacturers would then take the initiative in building safer automobiles.

How is a safety rating calculated? It is truly a fatality rating. The number of fatalities occurring in each make of automobile is obtained. In order to simplify classification, fatalities are used rather than the numbers of accidents or injuries. The percentage of the total number of fatalities occurring in each make of automobile is compared with that make's percentage of total automobile production. Then, an automobile having a low fatality rate in proportion to the make's percentage of total production could be regarded as safer than an automobile having a higher fatality rate in proportion to its percentage of total production.

Another way of stating it is:

$$\frac{\text{No. of fatalities in a certain make}}{\text{Total number of fatalities}} = \text{fatality rate}$$

$$\frac{\text{No. of that certain make produced}}{\text{Total number of autos produced}} = \text{production percentage}$$

Then:

$$\frac{\text{Fatality rate}}{\text{Production percentage}} = \text{Safety Rating}$$

The smaller the safety-rating number, the safer the automobile.

Is such a fatality rating valid? It is, if the following hypotheses are accepted:

1. All makes of cars are driven on the same good and poor roads.
2. All makes of cars are driven in the same varieties of weather.
3. All makes of cars are driven by drivers of similar ranges of ability.
4. Cars of similar horsepower are driven at similar speeds.
5. All makes of cars average the same number of miles per year.
6. All makes of cars average the same number of occupants.
7. If one considers only the fatalities occurring in cars manufactured in the current and in the previous year, such factors as *maintenance* and *age of the auto* are obviated.

Therefore, the only remaining variable factor is *automobile design.* The automobile designed to prevent fatalities will be the safest automobile.

Such reasoning probably transgresses every rule of logic. However, consider the number of chances or experiments. There are 90,000,000 automobiles driven hundreds of millions of miles a day. Consider the number of times they pass or meet one another, turn corners, start and stop. These exposures are basically tests of the product. The 47,800 fatalities last year attest to the fact that not all of these exposures were without incident.

Obtaining the fatality rating would not be difficult. Every state tabulates its fatal traffic accidents, and the automobile production is reported weekly and yearly.

Publishing the safety ratings of automobiles will be a stimulus for producing safer automobiles. True, some people don't care how dangerous their automobiles are, but the number of people who do care will cause the automobile manufacturers to make their products safer.

—*Charles W. Maplethorpe, Jr.,* M.D., Member IMS Safe-Transportation Committee

Editorials continued...

PUBLIC HEALTH MEETING IN STORM LAKE

The first of the series of regional meetings planned by the State Department of Public Health for the purposes of stimulating enthusiasm and furnishing suggestions for the improvement of local public-health services will be held at Kenabobs Restaurant, in Storm Lake, on the evening of Tuesday, October 12.

Dr. Arthur P. Long, commissioner of health, and Dr. James F. Speers, the newly-appointed head of the Division of Regional and Community Health Services in the State Department of Health, will be available from 5:30 to 6:00 p.m. to answer questions and to consult regarding specific problems. During the program that begins at 7:30 p.m., the speakers will include Dr. Long, Dr. Speers, a public-health sanitarian, a public-health nurse and a school nurse.

This is the first of the public meetings mentioned in the "In the Public Interest" article (green sheet) that appeared in the August JOURNAL. We urge northwest-Iowa doctors to attend, and to get other community leaders to accompany them.

Doctors in other parts of the state are asked to watch for announcements of similar meetings that will be held in their respective areas.

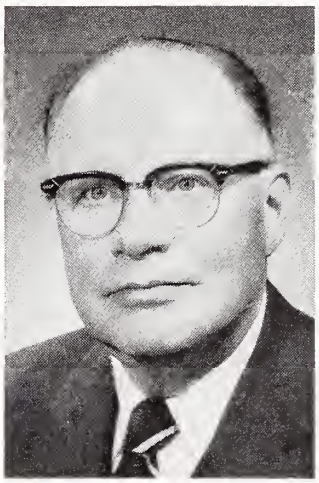
Postgraduate Medical Education

Postgraduate medical courses have increased more than 50 per cent in the past five years, and attendance at them has gone up even more sharply. Enrollment figures are incomplete, but 71,000 physicians were registered at only half of the total number of courses offered last year, according to the AMA Council on Medical Education. There was a comparable enrollment of 18,800 in 1954-1955.

The Iowa Medical Society's exhibit at the Iowa State Fair, August 20-29, was seen by about 10 per cent of the half-million persons who attended the event. The proposal that the IMS should present a display there, and should use it principally to promote tetanus immunizations, originated with the Committee on Rural Health. The principal attraction was a push-button game that tested visitors' knowledge regarding the tetanus problem and regarding tetanus prophylaxis. IMS headquarters personnel and members of the Women's Auxiliary took turns in staffing the exhibit. The picture shows Miss Tina Preftakes visiting with two of the fairgoers.

Besides tetanus, the display also presented information about the Iowa Medical Society and the Iowa Medical Foundation.

President's Page



One of our blessings, here in Iowa, and one that many of us fail to realize is the development of an efficient and progressive State Department of Health. Personally, I had an inadequate concept of the numerous activities and changes that were underway in that agency until I had the opportunity of hearing its energetic commissioner, Dr. Arthur Long, summarize his department's current projects and objectives before the IMS Executive Council at its most recent meeting.

Dr. Long has insight into the needs not only of the public but of physicians, both urban and rural, and he is most anxious to cooperate with them in solving public-health problems. Space does not permit an enumeration of the many activities of the revitalized State Department of Health, but suffice it to say that they are varied, and both educational and functional. For example, we can look forward to receiving an updated edition of the booklet on communicable diseases, a pamphlet on modern insecticides, and other publications which will be helpful to the practicing physician.

I might, at this time, encourage those of you who do not have public-health units in your communities to blaze the way for such organizations, for the best interests of all your fellow citizens.

Frank Ober

President

THE JOURNAL *Book Shelf*

BOOK REVIEWS

SURGERY OF THE PAROTID GLAND, by *Robin Anderson,* M.D., F.A.C.S., and *Louis T. Byars,* M.D., F.A.C.S. (St. Louis, The C. V. Mosby Company, 1965. $12.50).

The authors have compiled in a single reference a comprehensive work on an organ which is diseased or injured with relative frequency. Much has previously been written about the parotid gland, but, as the authors point out, there is much misunderstanding and confusion in the literature concerning anatomy, pathology, and therapy of the gland and facial nerve.

This book is easily readable, and brings order out of chaos regarding the known disabilities of an important organ. In seven chapters anatomy, pathology, diagnostic procedures, preoperative procedures, etiology, diagnosis, surgical and radiation therapy, complications and secondary reconstruction are discussed with unusual clarity. This book will provide a valuable asset to any medical library, and should be an essential reference for surgeons interested in the parotid area. —*C. C. Woodburn, Jr.,* M.D.

FITNESS FOR THE WHOLE FAMILY; Edited by *Paul Dudley White,* M.D., and *Curtis Mitchell* (New York, Doubleday & Company, Inc., 1964. $4.95).

This book grew out of the recent Institute of Fitness for Young Adults held at Camp Becket, in the Berkshire Hills. It is a compilation of the thoughts of persons, not all of them physicians, but all prominent and experienced in various fields where physical activities play major parts. Mostly, it is a book for the lay public, although I think physicians might do well to digest and apply certain chapters to their "less-active patients."

The book could lead the general lay reader into thinking more about the value of physical activities in promoting general health, and lead the physician reader into thinking more about making specific recommendations to certain patients in this regard. Certain chapters are more readily applicable to medical practice than others. For example, chapter ten outlines and illustrates specific conditioning exercises which are familiar to us all, but I dare say are seldom recommended to patients. Dr. Paul Dudley White, a co-editor, stresses the importance of physical exercise in the prevention of various ills (and he mentions atherosclerosis specifically).

A chapter is presented on social recreation for fitness, where games involving active physical movements are encouraged—for example, square-dancing, which is undoubtedly a healthier way of spending an evening than watching television. "Movies and TV," we are told, "have become the principal method of home entertainment, to the detriment of physical health." The chapter dealing with sports and fitness does not put enough stress upon the value of sports to health and well-being, but this is well enough done in other chapters.

This is one of several publications describing the value of physical and mental activities to a person's health. In some places it gets down to specifics (as in Dr. White's chapter and also in chapter ten), but admittedly it is hard to do, since the importance of physical activities in relation to specific health problems is just now being brought out. The book itself is wordy and at times repetitive, but throughout, it promotes the importance of physical activity and fitness to health—something that perhaps too few physicians take into consideration for their own health, as well as for that of their patients.—*William D. deGravelles, Jr.,* M.D.

SYNOPSIS OF CARDIOLOGY, by *Wm. J. Gefter,* M.D., *Bernard H. Pastor,* M.D., and *Ralph H. Myerson,* M.D. (St. Louis, The C. V. Mosby Company, 1965. $9.85).

A surprising amount of clinical information has been packed into this little volume, making it a handy reference book for the practitioner who seeks a quick refresher on a point in cardiovascular disease.

As befits a "synopsis," the volume is pocket-sized in length and breadth, but its 876 pages and 1½ inches of thickness make it more suitable for the bedside table than for the jacket pocket. The typography is good, the index helpful, and the considerable amount of information in the book is thus easily accessible to even the casual reader.—*Herman J. Smith,* M.D.

CARDIOMYOPATHIES, ed. by *G. E. W. Wolstenholme,* M.B., and *Maeve O'Connor,* B.A. (Boston, Little, Brown and Company, 1964. $12.50).

This Ciba Foundation Symposium, to which there were 38 contributors, constitutes a rather detailed discussion, and presents the clinical experience of several of the contributors, regarding the management of an uncommon and poorly-understood disease process —idiopathic hypertrophic obstructive cardiomyopathy, or if one prefers, idiopathic hypertrophic subaortic stenosis. Few aspects are left undiscussed, and the titles of the several chapters are "Clinical Aspects," "Haemodynamics," "Physiology of Cardiac Contraction," "Histochemistry and Electron Microscopy," "Haemodynamic Effects of Circulatory Drugs," and "Surgical Methods and Results of Operation."

Approximately three quarters of the book is devoted to the particular cardiomyopathy noted above,

and the remaining quarter to such other types as endomyocardial fibrosis, fibroelastosis, the lesion associated with Friederich's disease, and viral myocarditis. A very rewarding discussion follows each section.

Overall, the material is very well presented, and the illustrative material is clearly labelled and well reproduced.

The book should be of principal interest to students of cardiac disease, and it should be an excellent reference source on the subject for others.—*L. F. Staples,* M.D.

OPHTHALMOLOGY, PRINCIPLES AND CONCEPTS, by *Frank W. Newell,* M.D., M.Sc. (Ophth.), F.A.C.S. (St. Louis, The C. V. Mosby Company, 1965. $12.25).

This book is divided into four parts: Part I. Anatomy and embryology, physiology of the eye and pharmaocoly. Part II. History taking and examination of the eye. Part III. Diseases and injuries of the eye in their anatomical relationships. Part IV. Systemic diseases and the eye.

All of the illustrations are well done, the most current concepts are included, and there is a complete bibliography. Diseases of the eye are discussed without emphasis upon refraction, optic biomicroscopy, and similar areas in which a nonspecialist rarely becomes involved. Systemic diseases are presented so as to emphasize the fundamental abnormality of the primary disease process, rather than involvement of the particular portion of the eye.

This book will be useful in the library of the undergraduate and graduate student of medicine.—*Meredith R. Saunders,* M.D.

BOOKS RECEIVED

MANAGEMENT OF JUVENILE DIABETES MELLITUS, by *Howard S. Traisman,* M.D. and *Alvah L. Newcomb,* M.D. (St. Louis, C. V. Mosby Company, 1965, $12.75).

MODERN TREATMENT, Vol. 2 No. 4, TREATMENT OF DIABETES MELLITUS, edited by *Thomas F. Frawley,* M.D., and EMERGENCY TREATMENT OF TRAUMA, edited by *Henry C. Cleveland,* M.D. (New York, Hoeber Medical Division, Harper & Row, Publishers, 1965, $16.00 per year).

CURRENT SURGICAL MANAGEMENT, III, edited by *Edwin H. Ellison,* M.D., *Stanley R. Friesen,* M.D. and *John H. Mulholland,* M.D., (Philadelphia, W. B. Saunders Co., 1965, $11.50).

HANDBOOK OF PHYSICAL MEDICINE AND REHABILITATION, edited by *Frank H. Krusen,* M.D., *Frederic J. Kottke,* M.D. and *Paul M. Ellwood, Jr.,* M.D. (Philadelphia, W. B. Saunders Co., 1965, $16.50).

PROGRESS IN NEUROLOGY AND PSYCHIATRY, edited by *E. A. Spiegel,* M.D. (New York, Grune & Stratton, 1965), $17.50).

APPLICATIONS OF ELECTROENCEPHALOGRAPHY IN PSYCHIATRY, edited by *William P. Wilson,* M.D. (Durham, North Carolina, Duke University Press, 1965, $12.50).

CIBA FOUNDATION SYMPOSIUM, COMPLEMENT, edited by *G. E. W. Wolstenholme,* O.B.E., F.R.C.P., F.I., Biol., and *Julie Knight,* B.A. (Boston, Little, Brown and Company, 1965, $12.50).

CIBA FOUNDATION SYMPOSIUM, CARIES-RESISTANT TEETH, edited by *G. E. W. Wolstenholme,* O.B.E., F.R.C.P., F.I., Biol., and *Maeve O'Connor,* B.A. (Boston, Little, Brown and Company, 1965, $12.50).

AMA Campaign Against Rising VD

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION last month (September) urged physicians to cooperate in renewed efforts to detect and eradicate VD. Nationwide distribution has been given to posters, pamphlets, and radio and television announcements.

The September issue of TODAY'S HEALTH, published by the AMA, contains the first of a comprehensive two-part series on the two most troublesome venereal diseases—syphilis and gonorrhea. The venereal diseases are infecting 1,100,000 Americans a year—about 3,000 a day, or almost two a minute. Cases of infectious syphilis have almost trebled in this country in the past five years. Syphilis in those under age 20 increased by approximately 200 per cent in this period. More than a million new cases of gonorrhea are developing annually. In young people, the incidence is rising at a rate similar to that of syphilis. The diseases have long since reached epidemic proportions in some areas, particularly large cities. In some urban areas, there have been 200 to 800 per cent rises in the number of cases over a recent four-year period.

This is all needless tragedy, because syphilis and gonorrhea can be easily cured. The cure for both diseases—penicillin—has been available since 1943. Complacency, ignorance, and free-and-easy attitudes toward moral standards are partly responsible, as are increasing use of alcohol and homosexuality.

Many authorities believe, however, that thousands of young people simply aren't aware of the dangers of VD. Once infected, they are complacent about treatment.

Treatment for venereal diseases is easy and inexpensive. When administered by a physician in proper doses, penicillin will cure both syphilis and gonorrhea. Those who are sensitive to penicillin may be given other antibiotics.

Blood tests, incidentally, are not infallible detectors of VD. Both false positive and false negative results occur in a small percentage of cases. However, these tests are a great aid in diagnosis, especially when accompanied by a health examination.

Both the patient and the physician have a role to play in control of venereal disease, says the AMA. The doctor is more suspicious of venereal disease today, and more cases of early syphilis and gonorrhea are being diagnosed. The patient's suspicion also must be high if venereal disease is to be discovered and treated promptly. VD can be stopped if every person who suspects he or she has made a contact with an infected person will seek an examination immediately.

Conquering VD must be a team effort involving patients, physicians, government, social and health agencies, and educational and religious organizations.

Iowa Association of Medical Assistants

Re: Terminology

The medical secretary or medical assistant who has not had the benefit of some medical background or training has probably found that she is all at sea with her first medical dictation or transcription, because of the many words or phrases she doesn't understand or even know how to spell.

You do not have to be a student of languages to understand medical terminology. Many of our English words come from foreign languages; after all, we may have been born in the United States of America but our ancestors came from foreign lands; when they came here they brought their languages with them and words and phrases were carried over with usage into the new language. Many medical terms are of Greek or Latin derivation and are simple, descriptive terms. For instance, the word, "pelvis" is Latin and means basin or funnel. The pelvis of the kidney funnels the urine into the ureter, and the pelvic bones form the funnel for the birth canal. Simple, isn't it? Did you know that *cancer* is the Latin word for crab? The malignant growths called cancers originally were restricted only to growths in the breast, and they were so designated because the somewhat circular mass with extensions radiating from it resembled the form of a crab.

Many of our medical words are names or modifications of names of the people who originated, invented or discovered the procedure that they designate. Some examples are such familiar terms as *McBurney* incision, *Wassermann* test, *pasteur*ization, and *roentgen*ology. Names of places attached to nouns are also common modifiers, i.e., Malta (undulant) fever, Rocky Mountain spotted fever, or Bulgarian buttermilk. (Our present-day buttermilk and cottage cheese are prepared with skim milk and Bulgarian culture.)

Colors come into the terminology picture too. To be technical, *purpura* comes from Latin and means purple. However, "pink eye," "yellow jaundice" (a redundant designation, for *jaundice* comes from a word meaning yellow), and "Cerulean cataract" are terms which paint pictures we can see. We also hear terms which are derived from sound—*hiccup, burp, whooping cough* and *borborygmi* are good examples. Some of our modern terminology comes from activities that occasion difficulties, and we frequently hear such diagnostic terms as "tennis elbow," "football knee" or "athlete's foot."

Horace Cotton, in his book AID FOR THE DOCTOR'S AIDE, says that "a starting stock of 100 names will put you in business." Learn simple, general names first, and then add to your vocabulary and knowledge by the addition of tags—a *prefix* (meaning preceding) or a *suffix* (meaning following)—to the root. The term *pericarditis* combines a prefix, a root, and a suffix, i.e., *peri,* meaning around; *cardia,* meaning heart; and *itis,* meaning inflammation—an inflammation of the membrane around the heart. Some of the combined forms we may use daily are:

tonsillitis (tonsil + itis) inflammation of the tonsil
neuritis (neuro + itis) inflammation of a nerve
anesthesiology (an + esthesio + logy) the study of loss of sensation.

The physician expects his assistant to know the most common medical terms and abbreviations, especially those of his specialty. Spelling and pronunciations vary, and a dictionary gives the preferred spelling, a definition as simple as is consistent with clarity, pronunciation and syllabication of words which may be unfamiliar, and capitalization if the world is derived from a proper noun. However, do not expect your medical dictionary to be a textbook. It is a reference book, not a primer.

We suggest the following pamphlets and textbooks for further study:

THE BIRTCHER WORD BOOK, The Birtcher Corporation, Los Angeles 32, California

COMMON MEDICAL TERMINOLOGY, Abbott Laboratories, North Chicago, Illinois

AID FOR THE DOCTOR'S AIDE, Horace Cotton, Medical Economics Book Division, Inc., Oradell, N. J.

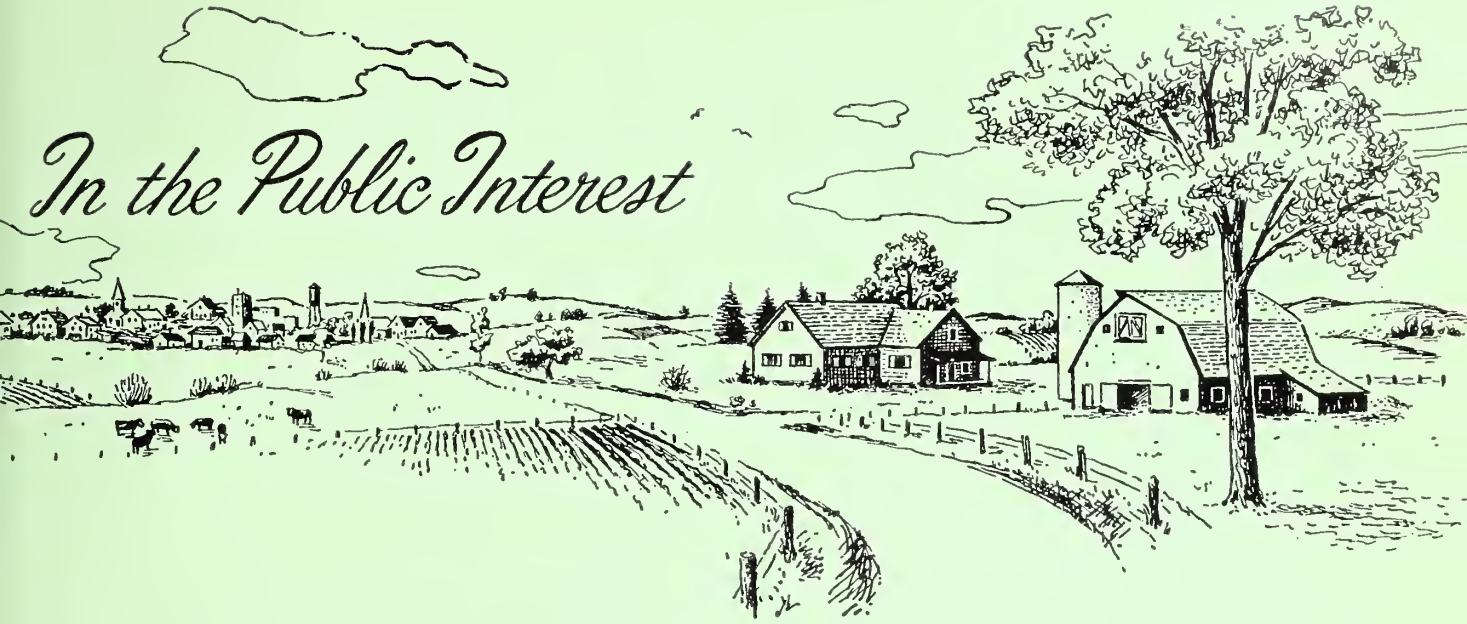
IN THE DOCTOR'S OFFICE, Esther Jane Parsons, J. B. Lippincott Co., Philadelphia

THE MEDICAL ASSISTANT, Miriam Bredow, McGraw-Hill Book Company, Inc., New York City

MEDICAL TERMINOLOGY MADE EASY, JeHarned, Physicians' Record Co., Berwyn, Ill.

USEFUL TERMINOLOGY FOR THE MEDICAL ASSISTANT, Lois Pluckhan, AAMA Bulletin, American Association of Medical Assistants, Chicago, Ill.

—*Helen G. Hughes*



Plans Are Being Made for the Formation of an

Iowa Association of the Professions

Pursuant to instructions from the House of Delegates of the Iowa Medical Society, the IMS Board of Trustees is making plans to invite other professional groups in the state to help it form an Iowa Association of the Professions. Michigan established such an organization in 1958, and New York (1962) and Illinois (1964) have followed Michigan's example. One is currently being formed in Wisconsin, and plans for others are underway in North Carolina, Texas, Indiana, Virginia, California and Hawaii. In the expectation that a nationwide network can be established, an American Association of the Professions was recently incorporated in Michigan.

Borrowing terms from organized labor, one might characterize the separate bar, medical and dental societies, etc., as "vertical" groups, and might think of associations of the professions as "horizontal" ones, since respectively they parallel the craft unions and the more broadly based ones such as the United Automobile Workers. Associations of the professions are formed in acknowledgement of the fact that professional people have many common concerns, chief among which are a dedication to the best interests of the people whom they serve, and an ability and a willingness to examine problems objectively and in depth, so as to formulate reasonable courses of action. By no means do the professions have a monopoly upon that point of view and upon those abilities, but through meetings of the minds and subsequent actions in concert with other organizations that have reached similar conclusions, they can improve their chances of making their points of view prevail.

Associations of the professions, then, should primarily be designed to achieve agreement upon national and state legislative issues, and to facilitate cooperation in getting them satisfactorily acted upon. At the outset, each profession and indeed each individual member will have separate concepts about priorities and about proper solutions for the problems that confront us all, but it is hoped that they all will recognize that they can accomplish more together than they could separately.

An association of the professions can serve additional functions that are scarcely less important. Each profession has many things that it can teach to the others—things that will make all of the professions more efficient in serving the public. As the Lions, Rotary and Kiwanis Clubs and local Chambers of Commerce do in each community, it can undertake statewide projects such as encouraging high academic performance in schools and colleges, assisting with the vocational guidance of high school students, and promoting the establishment of pre-professional courses of study in the community junior colleges.

Moreover, an association of the professions can offer its members some fringe benefits such as group insurance, group purchasing plans and low-cost international travel that are not available, or are to be had only in relatively unattractive forms, to members of the smaller professions through their "vertical" societies.

THE MICHIGAN PROGRAM CAN SERVE AS A MODEL

The Michigan Association of the Professions (MAP) has two types of membership—group and individual. The group members include the Michigan Society of Architects, the Michigan State Dental Association, the Michigan Education Association, the Michigan Society of Professional Engineers, the Michigan State Medical Society, the Michigan State Pharmaceutical Association and the Michigan Veterinary Association. Each of them pays $50 in annual dues. Because the State Bar of Michigan is a quasi-governmental organization under the control of the Michigan Supreme Court, it has not applied for membership. Individual memberships are sold for $15 per year, plus a $5 initiation fee to the men and women in each of the member professions, and to lawyers. Early this year, MAP's individual members numbered 3,416. The Michigan State Medical Society made a considerable initial loan to MAP, most of which has now been repaid, and the Medical Society gives it the services of an executive secretary. One of the lawyer members serves as MAP's legal counsel, free of charge.

MAP's projects include weekly television programs on two broadcasting stations. It distributes a monthly bulletin to its members, each issue of which contains an article by a representative of one of the professions, in addition to organizational and personal news items. MAP also offers its members group insurance (life, income-maintenance and major-medical), a furniture- and gift-purchase service, and a pension plan for the self-employed which meets the requirements of the Keogh Act.

THE ORGANIZATION WILL NEED ENTHUSIASTIC SUPPORT

Unquestionably, associations of the professions at the state level are highly desirable, and if the newly-formed American Association of the Professions is to be influential, the states must establish them. But the Iowa Association of the Professions will not be self-sustaining. Considerable staff time and printing bills will be involved. Securing new and renewal memberships will require considerable effort, for membership will not be essential to an individual's earning a livelihood, and attitudes can be expected to depend, in considerable measure, upon the organization's recent successes or failures in influencing lawmakers or in converting the general public to its points of view, and to depend upon the ups and downs of the economic cycle. Not only staff personnel but professional men and women in each community will need to spend part of their time enlisting new members and persuading old members to continue active.

Careful attention will have to be given to membership standards, but groups and individuals should not be excluded simply because their principal interests or attitudes are known to differ considerably from those of the others. MAP has welcomed the Michigan Education Association as a group, and teachers as individual members, even though educators are salaried people in the employ of governments or of religious or charitable foundations, and can be expected to subscribe, generally, to an economic philosophy at variance with that of the self-employed. Representation on the MAP board of directors is arranged so that no one profession can take control, and it is thought that diversity in the attitudes of the members is altogether a healthy state of affairs.

Perhaps too frequently it is said that we already have enough organizations. That will be true only when we have an organization to do everything that very much needs doing. Associations of the professions, as has already been said, would bring together men and women who are dedicated to public service, are able and willing to consider issues rationally, can be expected to reach agreement on proper courses of action, and together can influence the future course of events. We can't have too many organizations of that sort. To physicians who object that we already have the Iowa Medical Political Action Committee (formerly called the Iowa Physicians' Political League) and our respective political parties, we can reply that IMPAC and the Democratic and Republican Parties are concerned principally, if not exclusively, with the choosing and electing of candidates, and that the province of an association of the professions is to achieve agreement on issues and to influence public opinion. Those are equally important but dissimilar objectives.

We already have the Iowa Interprofessional Association, of which the state societies of doctors of medicine, dentists, pharmacists, hospitals, nurses and veterinarians are members. Its purpose has been similar to that of the proposed organization in that it was intended as a forum for exchanges of ideas on Iowa problems, but its scope of discussion, like its membership, has been limited to the health field. A broadening of IIA, including the establishment of local branches and individual memberships, has already been proposed more than once, and it is possible that it might form the nucleus for an association of the professions, perhaps without even a change in its name. It has already done praiseworthy work in organizing emergency medical care programs throughout the state, in combatting quackery and in other projects, and even with lawyers, architects, teachers, etc. among its members it might retain a health focus, in so far as its projects were concerned. Health activities are of major concern to all thoughtful citizens. There might also be a category of membership for institutions related to the professions.

Physicians can be sure that careful planning will be undertaken prior to the establishment of an Iowa Association of the Professions.

THE DOCTOR'S BUSINESS

Social Security Coverage For Physicians

HOWARD D. BAKER
Waterloo

Under the provisions of the Social Security Act of 1965, signed into law on July 30, a physician's self-employment earnings are covered for the first time, and the doctor is eligible for Social Security benefits in the future.

Self-employment earnings from your medical practice for the calendar year 1965 and subsequent years will be reportable on each annual federal income-tax return, which is due no later than the following April 15.

Maximum self-employment earnings subject to tax will be $4,800 for the year 1965, and $6,600 for each subsequent year. The tax is payable on self-employment earnings up to the maximum, but your self-employment earnings of course don't include a salary or other compensation which you receive and which is subject to the employee's Social Security tax.

The self-employment tax rate will increase gradually to its maximum in 1987. The rates and maximum taxes (including the hospital-insurance tax for 1966 and thereafter) are as follows:

Year	Combined Tax Rate Per Cent	Maximum Earnings Subject to Tax	Maximum Tax
1965	5.4	$4,800	$259.20
1966	6.15	6,600	405.90
1967 and 1968	6.4	6,600	422.40
1969-1972	7.1	6,600	468.60
1973-1975	7.55	6,600	498.30
1976-1979	7.6	6,600	501.60
1980-1986	7.7	6,600	508.20
1987 and after	7.8	6,600	514.80

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

In order to be eligible for Social Security benefits an individual must be "fully insured," "currently insured" or both, depending upon the benefit. In general, the following are the requirements for benefits:

1. Surviving children's benefits—"currently insured"
2. Surviving widow's benefits (after age 60)—"fully insured"
3. Disability benefits under age 65—"currently and fully insured"
4. Disability benefits over age 65—"fully insured"
5. Retirement benefits—"fully insured."

In order to be "currently insured," an individual must have had at least six quarters of coverage during the 13 quarters immediately preceding the quarter in which he files his claim. In order to be "fully insured," the quarters of coverage he needs depend upon his present age:

Present Age	Required Quarters of Coverage
40 or under	40
45	34
50	29
55	24
60	19
65	14
70	9
73 or over	6

Benefits are payable under Social Security for disability, for retirement and for survivors. In general, benefits are based upon average annual earnings subject to self-employment tax. Maximum benefits are based upon the new maximum taxable earnings of $6,600 annually. However it will be many years before anyone will approach that max-

imum average, and many persons between ages 35 and 55 never will.

At the present time, survivors' benefits are payable to the widow and children until the youngest child is 18 (or 22 if a full-time student); then they resume for life when the widow reaches age 60. If we use the maximum taxable earnings of $4,800, a widow with three children would receive $309 per month until her eldest child reached 18 (or 22); $306 until her second child reached 18 (or 22); and $204 until the youngest reached age 18 (or 22). Payments would then cease until the widow reached age 60, at which time she would begin receiving $97 per month for life.

These benefits will ultimately increase to $368, $368 and $252 until the children reach 18 (or 22), and then to $120 for the widow beginning at age 60.

Retirement and disability benefits are the same, and will range from $136 monthly for the present $4,800 annual average, up to a maximum, several years in the future, of $168 based upon the ultimate annual average of $6,600.

Moreover, the wife of a retired individual aged 65, or of a disabled individual, would be entitled to an additional $51 monthly at age 62, or to an additional $68 at age 65, based upon the present $4,800 maximum annual average. She would be entitled to an additional $63 at age 62, or $84 at age 65, based upon the ultimate $6,600 maximum average.

A disabled worker would also be entitled to additional benefits for his dependent children under age 18 (22). The total disability benefit to the individual will be subject to the $306 monthly maximum for average annual earnings of $4,800, or $368 maximum for the ultimate average of $6,600 annually.

THESE BENEFITS ARE RELATIVELY INEXPENSIVE

In terms of the total value of Social Security coverage, these benefits cost less than they would if they were purchased commercially. The exact value of coverage is dependent upon the age of the individual, his wife's age, and the number and ages of his children, however.

For example, let's take an individual 40 years of age, with a 38-year-old wife, and three children 4, 6 and 8 years of age. Survivors' benefits would be equal to about $65,000 of term insurance at an annual cost of $440. Disability benefits would average about $300 per month, and would cost about $200 per year to duplicate. For the retirement benefits, he would need a fund of about $33,000 at age 65, and to reach that goal he'd need to set aside $600 per year from his earnings and get a 6 per cent growth rate on those deposits. In summary, to duplicate Social Security benefits through a commercial source would require an annual cash outlay of about $1,240. The Social Security tax for the man whom we have chosen would average about $475 per year under present provisions.

YOU SHOULD REVIEW YOUR ESTATE PLAN

These values in your Social Security coverage are not academic or conversational; they are real. They must be taken into consideration in evaluating your life-insurance, disability-insurance and investment planning, since they affect all three very materially.

For example, if you were $25,000 short of your needs for life insurance a few months ago, you probably are in excess of those needs now. If you are just starting practice and are building a life-insurance program, Social Security will materially reduce your insurance needs, releasing funds for other phases of your financial planning. If you have a specific income goal for retirement, you are now a giant step closer to realizing that goal.

In summary, no future evaluation of your insurance or financial planning can be complete unless this Social Security coverage is considered.

Incidentally, a widely known tax-service publisher has recently circulated a sales brochure indicating that self-employed physicians must make certain choices no later than September 15, 1965. *This is not true!* Under the medical-insurance portion of the new law, all persons over 65 have a period in which to elect coverage. That period is from September 15, 1965, to March 15, 1966. Doctors have no choices to make other than that one, since the coverages described earlier in this article now apply to physicians. Actually, those coverages began as of January 1, 1965, and the first tax payment is due no later than April 15, with the 1965 federal tax return.

Autopsies

The Commissioners of the Joint Commission on Accreditation of Hospitals for some time have been concerned both with poor attendance at hospital autopsies and the need for greater utilization of autopsy findings. Each individual hospital should concern itself with these problems and its own ability to improve them. The Commissioners have the following *suggestions* to make:

a. Development by the hospital of the mechanics of getting staff physicians to attend autopsies and review histologic findings.

b. Review of the autopsy findings by the attending physician with the prosector if the attending physician is unable to be present at the autopsy.

c. Consideration of inserting a pertinent paragraph or two in the chart discharge summary, describing the highlights of the findings at autopsy.

d. Development of clinical pathologic conferences for the further utilization of autopsies.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., COMMISSIONER

Tetanus in Iowa

The accompanying tables showing 50 deaths from tetanus in Iowa during the years 1952-1964, inclusive, are based upon material from two sources. The data relative to deaths was derived from death certificates filed with the Division of Vital Statistics of the State Department of Health. The data on 55 cases of tetanus reported for the same period came from case reports sent to the Division of Vital Statistics.

Though for many years tetanus has been a "reportable" disease in Iowa, many physicians fail to report it because it is not communicable. Indeed, the numbers of tetanus deaths are likely to exceed the number of tetanus case reports. Our first information regarding tetanus cases usually comes to us by way of newspaper clippings. We then attempt to trace the case, and in so doing we obtain the name of the attending physician and ask him to verify it.

In 1958, a survey of tetanus in Iowa conducted by the U. of I. Institute of Agricultural Medicine revealed 114 hospitalized cases and 20 deaths for the five-year period ending June 30, 1956, or one death for each 5.7 cases.* That death rate was lower than those in other reported series. In a national review of tetanus made in 1957, the authors concluded that every third case, even

IOWA TETANUS DEATHS
1952-1964 INCLUSIVE

Age	Total Deaths	Male	Female	Rural	Urban
Under 1	4	3	1	1	3
1-4	1		1	1	
5-9	1	1		1	
10-19	2	1	1		2
20-29	5	3	2	5	
30-39	6	4	2	4	2
40-49	7	7		6	1
50-59	3	2	1	3	
60+	21	16	5	12	9
TOTAL	50	37	13	33	17

IOWA TETANUS CASES AND DEATHS REPORTED
1952-1964 INCLUSIVE

Year	Cases Reported	Deaths	Year	Cases Reported	Deaths
1952	3	2	1959	9	5
1953	1	5	1960	1	4
1954	3	4	1961	5	6
1955	1	5	1962	5	1
1956	8	2	1963	5	6
1957	6	3	1964	6	2
1958	2	5			

* 1958 Study on Tetanus in Iowa, by the staff of the Institute of Agricultural Medicine, U. of I., Iowa City.

REPORTED TETANUS CASES AND DEATHS
IN THE UNITED STATES
1947 THROUGH 1963

(Source: Morbidity and Mortality Annual Report of the Communicable Disease Center U. S. Public Health Service)

Year	Cases	Deaths	Death-Case Ratio (Deaths Per 100 Cases)
1947	560	511	91.2
1948	601	506	84.2
1949	579	398	68.7
1950	486	366	69.1
1951	506	394	77.9
1952	484	360	74.4
1953	506	337	66.6
1954	524	332	63.4
1955	462	265	57.4
1956	468	246	52.6
1957	447	279	62.4
1958	445	303	68.1
1959	445	283	63.6
1960	368	231	62.8
1961	379	242	63.9
1962	322	215	66.8
1963	325	210	64.6

with good medical care, results in death.** Using the case-death ratio that the Institute of Agricultural Medicine found, one must conclude that Iowa has had about 220 cases of tetanus during the 10-year period ending December 31, 1964.

The table showing ages and places of residence is interesting. It may be a bit surprising to notice that four deaths occurred to infants under one year of age, and that 21 deaths occurred in persons 60 years of age or more. Combining these, we find that exactly half of the tetanus deaths were either in the very young or in people of definitely advanced age. The urban:rural ratio was about 1:2

We attempt to learn the nature of each accident associated with infection, and we find that many cases have resulted from minor injuries. They include: splinter driven beneath fingernail; puncture wound of foot; nail puncture in foot; nail puncture in hand; hand laceration; finger injury; eyelid puncture; finger cut in corn-sheller; palm punctured by fish-hook; farm-implement accident; and thumb laceration sustained in fall on stairs.

It thus is obvious that in many instances the type of injury that can lead to tetanus is so minor as to be easily overlooked. For example, it was five days before the person who suffered the puncture wound of the eyelid felt he should see his physician. Five of 31 patients hospitalized with tetanus at University Hospitals, during the five-year period referred to above, were unable to recall the injury that provided the portal of entry for their infection.

Treatment for tetanus includes tetanus antitoxin given in large amounts. The procedure is painful, and very frequently is followed by a severe reaction. People can avoid the necessity for tetanus antitoxin by seeing to it that they are actively immunized against tetanus, and by following the primary immunization with booster injections as needed. Surveys made in 1964 show that only 20 per cent of Iowans over the age of 20 were adequately immunized against tetanus. Many areas in the state are improving their percentages, however. Burlington, Albia, Monona County, Hamilton County and Warren County are among the localities where adult tetanus immunization programs have recently been held. Other areas, including North Lee County, are planning them.

** Arnick, N. W., and Alexander, E. R.: Tetanus in United States; review of problem. AM. J. PUBLIC HEALTH, 47, (Dec.) 1957.

Have you moved in the past few months? PLEASE send any changes of address to 529-36th Street, Des Moines 12. Communication is a necessity: Do help us keep our mailing list up to date. You are our best source of accurate information.

Cholera Vaccination for International Travel

The following release has been received from the Chief, Division of Foreign Quarantine, U. S. Public Health Service:

"Cholera in recent years has spread from its usual confines in India and East Pakistan, and is currently reported in areas of Afghanistan, Burma, India, Pakistan, Philippines, Thailand and Vietnam. In addition, a cholera-like disease has been reported in Iran. Persons planning to visit or transit these countries are advised to be vaccinated against cholera, since many countries in which cholera is not present may require vaccination against this disease for all persons arriving within five days from an infected area. One of them is the United States.

"Immunization is obtained by two injections. There should be at least a seven-day interval between the two. Booster doses should be obtained at six-month intervals as long as danger of infection exists. The standard course need not be repeated at any time.

"The certificate is valid for a period of six months, beginning six days after the first injection of the vaccine, or on the date of a revaccination within such period of six months. If revaccination is within six months of a previous vaccination, keep the old certificate for six days as evidence that the new certificate is for revaccination. If revaccination is beyond the six-month period from the date of a previous cholera vaccination, the certificate is not valid until six days after the injection.

"The cholera vaccination should be recorded on an International Certificate of Vaccination or Revaccination against Cholera contained in the 'International Certificates of Vaccination,' Form PHS-731, Revised 1/61. The certificate should be validated by the health officer of the area in which the immunizing physician practices. The certificate is given with the passport application, or it may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402, at 10 cents per copy."

Northwest Iowa Physicians:
Plan to Attend the
Public Health Meeting in
Storm Lake
Tuesday Evening, October 12

For additional information, see the editorial on page 598 in this issue of the JOURNAL.

Typhoid Carriers and Typhoid Cases Iowa 1964

Because of deaths from other causes, five names were removed from the typhoid carrier list in 1964. Seven of the 39 remaining carriers have had either cholecystectomy or treatment to terminate the carrier condition, and are still in the process of being followed for a year after surgery or treatment to make certain they no longer harbor the organism.

Seven cases of typhoid fever were found during the year. One patient, age 18, was reported from Jasper County. This girl definitely received her infection in Mexico. Another, an 11-year-old girl, was reported in Taylor County. The remaining patients, in three closely related families, were in Scott County. Their ages were 15, 12, 6, 5, and 2. Although the mother of one of these families had a questionable illness, she was never diagnosed as having typhoid fever.

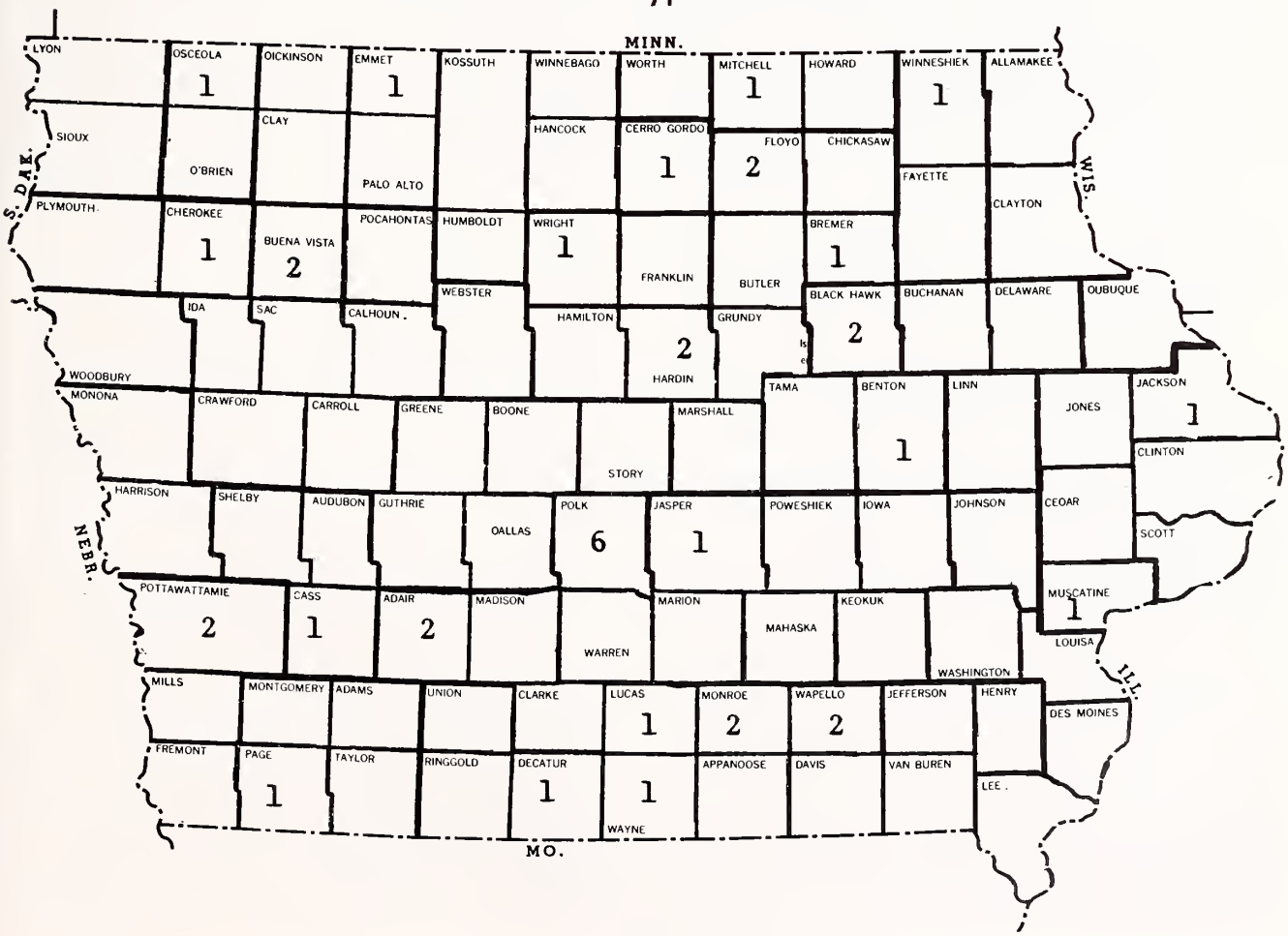
No new carriers were found in 1964. It is almost impossible to find carriers for every case of typhoid fever. Our communicable-disease consultant nurse spent 18 days working individually or with the Davenport city health officer, the nurses from the Davenport Visiting Nurse Association, the Scott County nurses and hospital nurses in Davenport trying to find a possible source for the five Scott County cases. Although the mother's illness could not be diagnosed as typhoid fever, it was thought that the nursing home where she worked might have been the source of the infection. However, in spite of two complete rounds of checking on residents and staff of the nursing home and following back on the histories of all patients transferred there from one of the state mental institutes, no source of infection could be established.

PRESENT AGE RANGE OF IOWA'S 39 TYPHOID CARRIERS

No. of Patients	Age Group
4	40-49
5	50-59
14	60-69
12	70-79
3	80-89
1	90-99

Median age—67

Distribution of Typhoid Carriers



The county engineer surveyed the area where the three families lived, and could report no definite defects in the water supply or sewage disposal systems.

Work records also show that our public health nurse and the regional public health nurse and engineer spent a total of two weeks in Taylor County, which has no public health employees, trying to find a source of infection for the case there.

The Disease That Never Was

Something like three quarters of a century ago, sudden and unexpected death during anesthesia and surgery was attributed to *status thymicolymphaticus,* later called *status lymphaticus.* The British Hyderabad Commission studied these deaths for two years and found that they were many, but that no physician ever had a second case. Thereupon they discarded the entire concept, indicating that careful watching of the patient was important, not the thymus gland. But ideas die hard. *Status periculosis* came next, then *syncope,* and after that we had *cardiac standstill,* and *asystole.* Today we speak learnedly of *cardiac arrest.*

That every patient who dies has an arrest of the heart goes without saying; this is not at all the greatest fault we find with this phrase. That the words are meaningless is obvious. That their idea is old is common knowledge. And that there is no such disease should be known to us all.

Cardiac arrest in the operating room is not a disease; it is not a diagnosis; it is a time-worn defense. It would seem proper to remove from the list of diseases one that does not exist.

—From an editorial by Frank Cole, M.D., in NEBRASKA M.J., **59**:413-414, (August) 1965.

AVAILABLE FROM THE STATE DEPARTMENT OF HEALTH

For venereal disease control
- Procaine penicillin (aqueous or oil suspension)
- Benzathine penicillin G (Bicillin)
- Achromycin (250 mg. capsules)

Immunizing agents
- Triple toxoid
- Diphtheria-tetanus toxoid (Combined, absorbed or precipitated—Adult type)
- Salk and Sabin poliomyelitis vaccines
- Typhoid vaccine triple (Typhoid, para A and para B)
- Smallpox vaccine

Rabies control materials
- Duck embryo anti-rabies vaccine
- Anti-rabies serum

Histoplasmin

Snake anti-venom (kept at poison center and sub-centers)

Gamma globulin (for protection of people exposed to measles, German measles, or infectious hepatitis, if the risk is sufficiently great)

For detailed information, see the April, 1965, JOURNAL, *pages 225-227, or telephone the Department.*

Morbidity Report for Month of August, 1965

Diseases	1965 Aug.	1965 July	1964 Aug.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	83	111	116	Jackson, Jefferson, Johnson
Typhoid fever	1	0	1	Henry
Smallpox	0	0	0	
Measles	32	53	91	Dubuque
Whooping cough	1	2	12	Des Moines
Brucellosis	10	1	15	Crawford, Linn
Chickenpox	10	49	34	Dubuque, Scott
Meningococcal meningitis	0	1	0	
Mumps	19	54	136	Des Moines, Polk, Scott
Poliomyelitis	0	2	0	
Infectious hepatitis	40	29	31	Crawford, Des Moines, Dubuque
Rabies in animals	14	27	43	Jasper, Lee
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	20	23	35	For the state
Syphilis	50	75	90	For the state
Gonorrhea	184	338	199	For the state
Histoplasmosis	2	1	2	Cerro Gordo, Wayne
Food intoxication	1	0	12	Hardin
Meningitis (type unspecified)	2	1	1	Henry, Lee
Diphtheria carrier	0	0	0	
Aseptic meningitis	5	1	0	Jackson
Salmonellosis	11	11	18	Linn, Polk
Tetanus	2	0	0	Henry, Van Buren
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	2	3	
H. influenzal meningitis	2	0	0	Page, Scott
Amebiasis	1	2	3	Polk
Shigellosis	3	4	2	Black Hawk, Johnson, Polk
Influenza	0	0	1	

Woman's Auxiliary News

Homebound Handcraft Sales

May we introduce to you the new director of Crafts at the Iowa Society for Crippled Children and Adults: Mr. Fred Kelly. In order to make a distinction between the homebound handicapped and the employed handicapped, he has suggested we change the name of our craft sale to "Homebound Handcraft Sales." His Society is not interested in having us conduct sales in additional places during this forthcoming year, but it is deeply interested in helping its clients provide better merchandise, more variety, and new items. Mr. Kelly is making personal contacts with a number of homebound handicapped, teaching them new skills and offering suggestions to improve their present abilities. Mary Poppins dolls and wooden trains are among the new items to be offered for sale this season. His new ideas on publicity will greatly aid us in promoting these sales.

You are cordially invited to visit Camp Sunnyside, at 401 N. E. 66th Street, any time you are in Des Moines; or if your group would like to consider holding a luncheon meeting at the camp, you are invited to do so.

International Homemakers Meeting

The Third International Congress of Homehelp Services was held in Konigstein/Tannus (near Frankfurt), West Germany, September 8-11, 1965. The United States, a member agency of the International Council, was officially represented at the Congress by three delegates appointed by the National Council for Homemaker Services, one of whom was Mrs. Allan B. Phillips, of Des Moines. Mrs. Phillips will be giving a report on that meeting in a forthcoming issue of the WOMAN'S AUXILIARY NEWS.

The International Council has held two previous Congresses. The first, held during 1959, in Woudschoten, Netherlands, discussed the position of homemaker service in the total system of social welfare. The second, held in Paris during 1962, focused on the work of the homemaker in the family of today. The 1965 Congress emphasized: "Homehelp—a Modern Social Profession." Training and the professional tasks of the homemaker, working conditions and potential professional development were discussed.

Representatives came from the 14 countries presently affiliated with the International Council, as well as from countries which are in the process of undertaking homemaker programs.

Iowa State Fair Immunization Exhibit

Eight members of the Auxiliary assisted the Iowa Medical Society's staff in manning a booth at the Iowa State Fair. The members who participated were: Mrs. Rodney Carlson, Ankeny; Mrs. J. F. Veverka, Prairie City; Mrs. Max Olsen, Minden; and Mrs. Howard Ellis, Mrs. Elmer Vorisek, Mrs. James Ryan, Jr., and Mrs. William B. Chase, Jr., Mrs. Olin Elliott, all of Des Moines. Through the use of a question and answer board, the booth, designed by Mr. Don Neumann, informed the public on the tetanus threat, and urged everyone to get and renew inoculations with tetanus toxoid.

It was sheer delight to find our young people eagerly seeking information and to find that they were well informed on the problems of health and the need for preventive medicine.

Health Careers

Encouraging young people to choose careers in health fields is a very important part of the work of your Auxiliary, and particularly of your Health Careers chairman. She is the person who helps in organizing future nurses' clubs or health careers clubs in your schools, and we ask that you give her your full support.

This year we urge especially that you cooperate with your Health Careers chairman in setting up a Health Careers Day in your community some time this fall. We know this will be a very rewarding experience for you as Auxiliary members, as well as for the doctors who participate and for the young people who attend. For information regarding a careers day, write to: Mrs. Carroll O. Adams, 515 South Vermont Street, Mason City, Iowa 50401.

A Brief History of Sioux Med Dames

(Woodbury County Medical Auxiliary)

In January, 1924, the members of Woodbury County Medical Society gave a luncheon for their wives, and suggested at the affair that the wives form some kind of organization. The following March, the Sioux Med-Dames came into being with 71 charter members, including the following officers: president, Mrs. I. E. Nervig; first vice-president, Mrs. Milton Daily; second vice-president, Mrs. S. E. Sibley; secretary and treasurer, Mrs. A. M. Warren and Mrs. B. A. Bowers. After much discussion, the group voted to call themselves, the Sioux Med-Dames—Sioux for Sioux City, Med for medical and Dames for women. Five years later, and one month after organization of the State Auxiliary, we affiliated with that group, but voted to retain our name, the Sioux Med-Dames. But I am getting ahead of our story. In January, 1925, less than a year after our organization, we entertained the wives of the doctors attending the Sioux Valley Medical Society meeting. This courtesy has been continued all through the years.

The Sioux Med-Dames entertained the State Auxiliary for the first time at the "Third Annual Meeting" of the state organization in 1932, and again in 1938 and in 1951. Mrs. B. A. Bowers, Mrs. C. A. Katherman and Mrs. M. A. Blackstone, respectively, were presidents in those years.

The organization's minutes for the past 34 years, reveal that the Sioux Med-Dames' function has been to fill current needs. It was founded as a result of our husbands' wanting us to take care of the social aspects of a medical educational meeting. In our early years we continued being helpful by sewing for charitable organizations, conducting Tag Day for the Rose Cross, working on Red Cross and Cancer Control Drives as early as 1939, contributing, for the first time in 1942, to the Nurses Loan Fund, and working strenuously during the Second World War years for Canteen, Red Cross, Grey Ladies, U.S.O., and as Nurses' Aids. During the War, wives of doctors stationed at the Sioux City Air Base were invited to our meetings. In June, 1944, we had much to do with the founding of Latham Nursery, at Irving School, for children of parents who worked. Mrs. L. E. Pierson was at the head of this project. In 1945, we sponsored the Cancer Drive. At each December meeting, beginning in 1941, we took up a Christmas collection for a charitable organization. For the past six years we have done something special with this money, in that we have chosen River Heights T. B. Sanatorium as the recipient of our Christmas good will. It is a county hospital, and both the institution and its patients have many needs. Those doing the buying, wrapping and delivering of gifts get a great deal of pleasure from this Christmas project.

Perhaps our greatest contribution to our community and state, was beginning the sales of merchandise made by handicapped and crippled children. Mrs. LeRoy Ayers, a Sioux Med-Dame, together with other members of the group and Miss Marie Marietta, director of Woodbury County Society for Crippled Children, made inquiries and sought for an acceptable program to help these children. Mrs. Dorothy Phillips, executive secretary of the Iowa Society for Crippled Children, came to Sioux City with material and information for the Sioux Med-Dames. The first sale was held May 3, 1947, at Toller's Drug Store, and netted the children $110.00. The second sale, December 8, 1948, at Younker's Store, was better organized, with a greater amount of merchandise available, and total sales increased to $254.00. The largest amount collected was in 1952, when $1,335.07 was reported. We are proud of this project, and proud that the State Auxiliary took it over as one of its state-wide projects.

In October, 1952, we organized Future Nurses Clubs under the able direction of Mrs. L. E. Pierson. Interest by the Sioux Med-Dames waned after several years, however, and the project was dropped. No new projects were begun during the past year by the Sioux Med-Dames themselves, but ground work has been begun in the city for a Martin Luther Home to be built in the near future. This may well be a spot presenting a need to the Sioux Med-Dames!

We are proud of our record and our accomplishments, and we enjoy to the utmost working with each other and with our doctor husbands.

Auxiliary Histories

In our files, we have discovered a number of histories which were written in 1958. We have made copies of these and sent them to county historians or presidents. We should very much appreciate the cooperation of the respective persons in updating each history and returning it to us as soon as possible.

AMA-ERF CHRISTMAS CARDS

Portfolio of sample cards now available from your county AMA-ERF chairman, or from Mrs. R. H. Wicks, state AMA-ERF chairman, 204 South Story Street, Boone 50036.

Getting Acquainted With . . .

Mrs. Richard J. Peterson, Panora, Iowa

Dallas-Guthrie County President

Mrs. Peterson is the former Norma Utterback of Sigourney, Iowa.

She attended the American Institute of Business, in Des Moines, and the State University of Iowa, at Iowa City.

Dr. and Mrs. Peterson have lived in Panora since 1954. Dr. Peterson graduated from the College of Medicine at the University of Iowa in 1953. They are the parents of two daughters, ages 6 and 10.

Norma is a member of the Christian Church, where she has been study director of the CWF for several years, and also a member of Rachel Circle.

Mrs. Carroll O. Adams, 515 S. Vermont Street Mason City, Iowa

Cerro Gordo County President and State Health Careers Chairman

Mrs. Adams was born Velma Irene Smith in a very small southeastern Nebraska town called Verdon, and she spent all of her first 18 years in that community. She graduated from high school in 1927, and went into nurses' training at Immanuel Hospital, Omaha, in September of that year. The following spring she caught scarlet fever from a patient. It left her with some heart trouble, and she was advised not to go on with training at that time. After a year of rest and disability, she elected to go to college instead of continuing nursing, and she graduated from Doane College, at Crete, Nebraska, with an A.B. degree in 1933. It was while there that she met her future husband, Carroll O. Adams, a Doane graduate in 1931. They were married in December, 1932, just before she graduated and when he was in his sophomore year in Medical School at University of Nebraska School of Medicine, in Omaha. Dr. Adams took his internship at University Hospital in Omaha following his graduation in 1935. They next went to the University of Chicago, where Dr. Adams completed a four year residency in orthopedics. They then selected Mason City, Iowa, as their home, and have continued to live there for 25 years. Dr. Adams is in the practice of orthopedic surgery with the Park Clinic, a group of 20 doctors.

They have four children. Carol Jean Russell, born in 1935, took an A.B. at the University of South Dakota in 1956, and an M.A. at the University of Iowa in 1964, and is teaching English and Speech in the Webster City Junior College. She has a seven-year-old boy. Mary Jane (Mrs. Robert Kelley) took a B.S. at the University of Iowa in 1959, and an M.D. at the same school in 1963. She served her internship at Los Angeles County Hospital, in California, and is now in her second year of residency in anesthesiology at Los Angeles County. She was married in May of this year. They also have two sons. Richard is a 1965 graduate of University of Iowa (Phi Beta Kappa and with honors) and will enter the U. of I. medical school soon. He is married and has two baby girls. Robert graduated from Mason City High School this past June and entered Doane College last month. At this time he is undecided as regards a career.

The Adams family has always been much involved in civic affairs of the community, and with school, church and club activities, and it has always been Mrs. Adams' plan to drop some of her activities and outside responsibilities when her children reached adulthood. But she seems only to get more involved.

Governor's Conference on Children And Youth

On Thursday, September 30, Governor Harold Hughes, in cooperation with the Iowa Commission on Children and Youth, convened the 15th Annual State Conference on Children and Youth at the Memorial Union, Iowa State University, Ames. It provided an opportunity for all concerned with youth development to hear Mrs. Evelyn Millis Duvall, one of the most outstanding lecturers and authors on family and youth life. She is chairman of the International Liaison Committee of the National Council on Family Relations, the first woman from the Western Hemisphere to serve in this capacity. The organization's headquarters are in Paris, France.

Governor Hughes and Mrs. Duvall spoke in the morning, and their addresses were followed by workshops, all of which had the same agenda. The leaders were Mrs. Marguerite Cothorn, executive director of the Des Moines Council of Social Agencies; Mrs. Robert Crook, president of the Iowa Congress of Parents and Teachers; Mrs. Robert Day, of the Washington Y.W.C.A.; Dr. Glenn Holmes, an extension specialist in education at Iowa State University; Ken Jones, probation officer, Clarinda; President J. W. Maucker, of the State College of Iowa; Miss Alice Myers, executive director of the Des Moines Y.W.C.A.; and Msgr. J. E. Tolan, of Humboldt.

There were exhibits and take-home materials in the fields of education, employment, welfare, health, work programs, recreation, spiritual values, etc.

General chairman for the conference was Miss Helene Mosier, Des Moines, Iowa Town & Country Y.W.C.A., and the program chairman was Mr. Kenneth Langer, of the Iowa Farm Bureau Federation.

The Evergreen Years

(The following are excerpts from a convention address of a few years ago given by Edward L. Bortz, M.D. and printed in the BULLETIN.)

As you have become increasingly aware, we are in the midst of a profound and accelerating social revolution.

As science has revealed methods for the diagnosis and treatment of the various diseases which destroyed the lives of infants and mothers at childbirth, a substantial reduction of death rates from these dread afflictions has occurred. Accordingly, more people are living into the golden years, the later years of mature human living.

The evergreen years are those which one attains at the summit of the human life span after a period of growth, development and maturing. To make the most of the added years, it is necessary to have a clear understanding of the dynamics of personal growth. Personally, I hold the human body and nervous system in awe and reverence. They are things of beauty and of tremendous dynamic power. Yet the most of us are living as second-class citizens because we are not taking advantage of the tremendously important information now available concerning the care of this amazing mechanism, the human body.

This is a do-it-yourself plan, for no one can do as much for you, for me, or for your family or mine as we can, individually and collectively, do for ourselves.

A Wholesome Regimen. Since the major afflictions of older citizens today can be traced to faulty diets, flabby bodies, excessive fatigue and aimless living, the antidote for this inexcusable combination of circumstances is to follow a wholesome regimen of an adequate, but not excessive, diet, generous exercise and sufficient rest.

Purposeful Activity. The crowning glory of a wonderful existence is to have a high and specific motivation, that is a purposeful, useful activity, a dedicated way of living in which the mature individual finds that deep source of satisfaction is being useful to his fellow man. We are an immature and youth-orientated society, and so far have been completely indifferent to the deep, rich and colorful values which can be enjoyed only in the full bloom of human nature—in the evergreen years.

Stop Worshipping Youth! The time has come when we need to cease worshiping the glamor and romance of youth, and to concentrate on the contributions which the older, mature citizen can make to his community.

In a major degree, the future lies pretty much in your hands. I refer to the direction and development not only of American medicine but also of the American way of life.

Let me emphasize a few important points. Nature has placed a higher value on the female of the species than on the male. Woman's body is protected by her ovaries, and she is not so susceptible to wear and tear, particularly of the blood vessels but also of other body tissues which brings about premature breakdown. As long as a woman's ovaries are healthy and function adequately, she has a superior protection. There are more widows than widowers.

Bonds of Affection. Men and women, young and old, flower in the ecstasy of affection in its fullest essence. It is easily within reach for each individual to maintain poise, posture and attractiveness of physique.

Emphasize Self-Support. Dependency breeds hostility. Useful activity provides high and specific motivation and is a justification for living the added years. Science has shown how it is possible to add years to life; now it is up to us to add life and meaning to these years. When the incentive and the zest for living are lost, senility is inevitable. Instead of retirement at 65, one should be ready for a second career.

New Experiences Ahead. There are charm and exciting new experiences ahead. Certainly there is some waning of physical vigor, but in truth, society does not need the muscle-man of today. The preservation of a reasonable physical vitality is not difficult if one will attend to diet, exercise, rest and self-discipline, and keep a happy, cheerful heart.

Grow With the Years. To gain those enduring satisfactions and to enjoy a sense of belonging, we need to continue to grow with the years. Nor can man live by bread alone. The emotional, intellectual and spiritual content of living can be nurtured and encouraged through attention to the needs of the human heart and mind.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

President-Elect—Mrs. S. M. Korson, Box 111, Independence 50644

Recording Secretary—Mrs. L. H. Prewitt, 33 Birchwood Hills, Ottumwa 52501

Corresponding Secretary—Mrs. H. C. Leiter, 2400 E. Solway, Sioux City 51104

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Veverka, Prairie City 50228

Co-Editor—Mrs. R. R. Carlson, 826 Sherman Drive, Ankeny 50021

JOURNAL of The IOWA MEDICAL SOCIETY

U.C. MEDICAL CENTER LIBRARY
NOV 10 1965
San Francisco 22,

IN THIS ISSUE

- Radiation Therapy and Your Patient
  J. W. J. Carpender, M.D.—Page 621
- Panel Discussion: Placenta Previa—Page 626
- Trauma to the Thoracic Aorta
  Montague S. Lawrence, M.D., and Johann L. Ehrenhaft, M.D.—Page 637
- Malabsorption Syndrome in Iowa
  Thomas H. Kent, M.D., and James A. Clifton, M.D.—Page 643
- University of Iowa College of Medicine
  Clinical Pathologic Conference—Page 651

NOVEMBER, 1965

the difference between cough and relief

Benylin® Expectorant

Each fluidounce contains: 80 mg. Benadryl® (diphenhydramine hydrochloride, Parke-Davis); 12 grains ammonium chloride; 5 grains sodium citrate; 2 grains chloroform; 1/10 grain menthol; and 5 per cent alcohol.

for relief of coughs due to colds or allergy

PRECAUTIONS: Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this preparation. Hypnotics, sedatives, or tranquilizers, if used with BENYLIN EXPECTORANT, should be prescribed with caution because of possible additive effect. Diphenhydramine has an atropine-like action which should be considered when prescribing BENYLIN EXPECTORANT. PACKAGING: Bottles of 4 oz., 16 oz., and 1 gallon.

72165

PARKE-DAVIS

PARKE, DAVIS & COMPANY, Detroit, Michigan 48232

IN THE TREATMENT OF SELECTED CASES OF PREMATURE LABOR

AND THREATENED

AND HABITUAL ABORTION

Lutrexin®

H.W.&D. BRAND OF LUTUTRIN

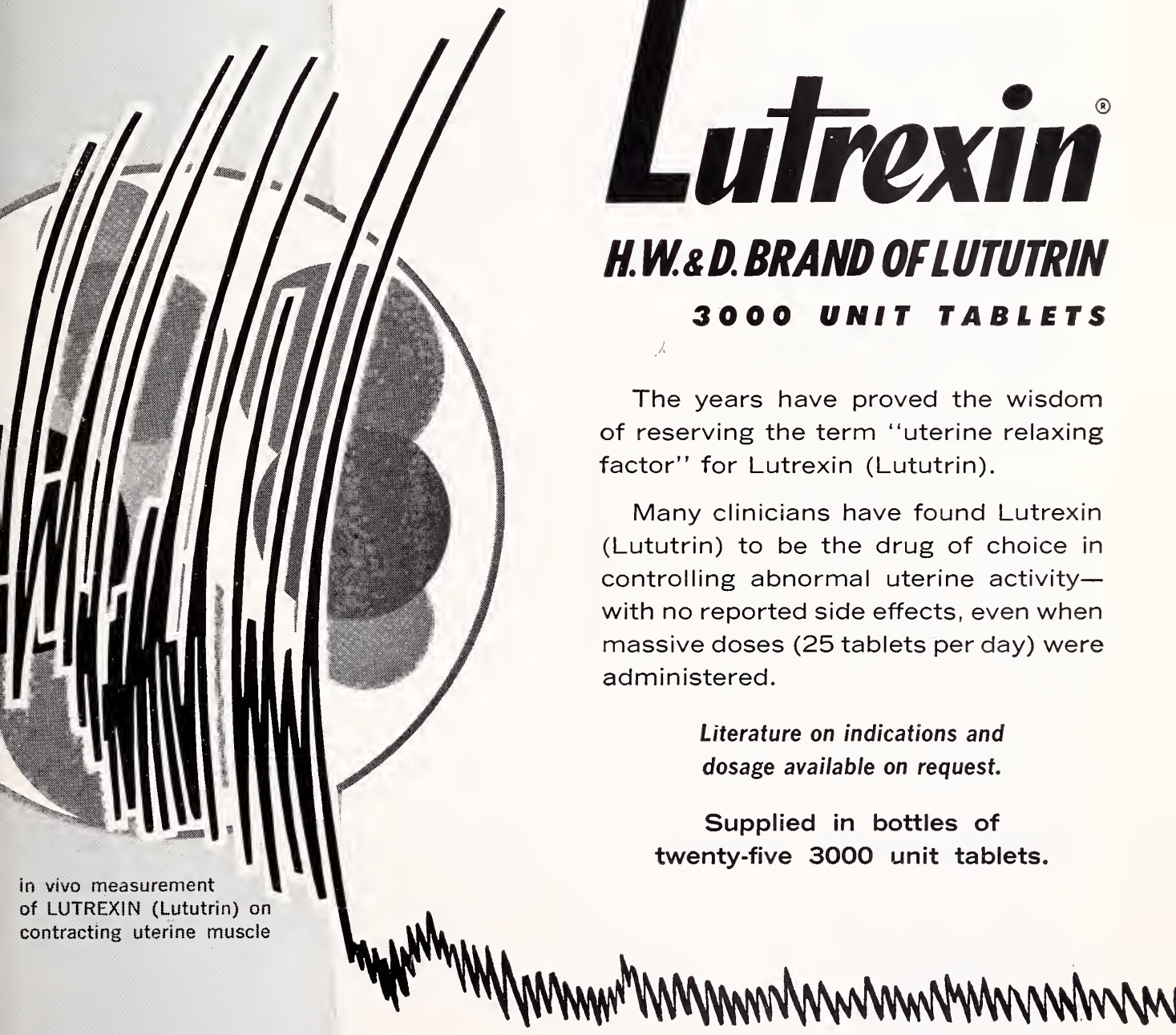
3000 UNIT TABLETS

The years have proved the wisdom of reserving the term "uterine relaxing factor" for Lutrexin (Lututrin).

Many clinicians have found Lutrexin (Lututrin) to be the drug of choice in controlling abnormal uterine activity—with no reported side effects, even when massive doses (25 tablets per day) were administered.

Literature on indications and dosage available on request.

Supplied in bottles of twenty-five 3000 unit tablets.



in vivo measurement of LUTREXIN (Lututrin) on contracting uterine muscle

HYNSON, WESTCOTT & DUNNING, INC.

(LTR21)

BALTIMORE, MARYLAND 21201

The JOURNAL of THE IOWA MEDICAL SOCIETY

Vol. LV NOVEMBER, 1965 No. 11

CONTENTS

Washington Investigations
Clark R. Mollenhoff 613

SCIENTIFIC ARTICLES

Radiation Therapy and Your Patient
J. W. J. Carpender, M.D. 621

Panel Discussion: Placenta Previa 626

Trauma to the Thoracic Aorta
Montague S. Lawrence, M.D., and Johann L. Ehrenhaft, M.D. 637

Malabsorption Syndrome in Iowa
Thomas H. Kent, M.D., and James A. Clifton, M.D. 643

University of Iowa College of Medicine
Clinical Pathologic Conference 651

EDITORIALS

Digesting Our Knowledge 660

Homografts 660

Fetal Transfusions in Erythroblastosis Fetalis . 661

Epidemics of Whooping Cough Can Still Occur . 661

Deafness and the Temporal Bone Banks Program 662

SPECIAL DEPARTMENTS

Coming Meetings 658

President's Page 663

The Doctor's Business 664

In the Public Interest . . . . . facing page 664

Journal Book Shelf 665

Iowa Chapter of the American Academy of General Practice 667

State Department of Health 668

Iowa Association of Medical Assistants 672

Woman's Auxiliary News 673

The Month in Washington xxii

Personals xxvii

Deaths xxxix

MISCELLANEOUS

Advances in the Management of Blood Diseases . 656

Physician's Service a Bargain xl

U. of I. Outpatient Speech and Hearing Clinic . xlii

COPYRIGHT, 1965, BY THE IOWA MEDICAL SOCIETY

EDITORS

Dennis H. Kelly, Sr., M.D., Scientific Editor, Des Moines
Edward W. Hamilton, Ph.D., Managing Editor..... .....Des Moines

SCIENTIFIC EDITORIAL PANEL

Walter M. Kirkendall, M.D.....Iowa City
Floyd M. Burgeson, M.D.....Des Moines
Daniel A. Glomset, M.D.....Des Moines
Robert N. Larimer, M.D.....Sioux City
Daniel F. Crowley, M.D.....Des Moines

PUBLICATION COMMITTEE

Cecil W. Seibert, M.D.....Waterloo
John H. Sunderbruch, M.D.....Davenport
Kenneth E. Lister, M.D.....Ottumwa
Richard F. Birge, M.D., Secretary.....Des Moines
Dennis H. Kelly, Sr., M.D., Editor *Ex Officio* Des Moines

Address all communications to the Editor of the Journal, 529-36th Street, Des Moines, Iowa 50312

Postmaster, send form 3579 to the above address.

Second-class postage paid at Fulton, Missouri, and (for additional mailings) at Des Moines, Iowa. Published monthly by the Iowa Medical Society at 1201-5 Bluff Street, Fulton, Missouri 65251. Editorial Office: 529-36th Street, Des Moines, Iowa 50312. Subscription Price: $5.00 Per Year.

Washington Investigations

CLARK R. MOLLENHOFF
Washington, D. C.

We are embarking upon what our President calls "The Great Society." He describes in extravagant terms how the wealth of the United States will be managed so as to provide a bountiful existence for everyone. The goals are laudable, but the grand design certainly carries with it increased responsibilities for government, for the press and for the average citizen.

A domestic peace corps and a poverty program are in being. Federal aid to education passed the Congress with big majorities, and a broad medical-care bill is about to be implemented. If these new programs were sure to be administered fairly, and to do only the highly beneficial things the sponsors say they are designed to do, then we could stop worrying. However, we must view these programs against the background of reality which is periodically pointed out by Congressional investigations. We must watch the administration of these programs against the reality of bureaucratic authoritarianism, political influence peddling, governmental waste and outright fraud that threaten to encroach upon all programs.

Fraud in government always concerns me, but it does not frighten me any more than it frightens you that disease still exists. However, I become most gravely concerned when there are indications that corruption is not being detected, that it cannot be eradicated when it has been detected, and that many people who should be doing something about it are doing nothing.

As citizens and as doctors you must become more acutely aware of the role of an independent press and the role of the Congressional investigation in exposing those corrupting influences which distort or destroy governmental programs. You must understand that there will be a small amount of mismanagement under the most carefully drafted laws. Under loosely drafted legislation that permits broad discretion, there is a greater possibility that high government officials will distort those laws to their own political or financial benefit.

There are important lessons for you in the Washington investigations of recent years—the bank scandals, the interstate road-construction scandals, the Billie Sol Estes investigation, the TFX investigation, the Otepka case, the Bobby Baker case. They represent classic instances of political tampering, carelessness, arbitrary misuse of power, fraud, and deception of the public and the press. You will find some of the same elements present in the investigation by the Iowa Legislature of the discharge of an employee of the State Department of Agriculture. I believe that close study of some of these matters can be helpful to you as you work in and around more government programs in the years ahead.

It would serve no purpose for me to try to spell out what may go wrong with the new programs of "The Great Society." I shall deal with them as the facts emerge over the coming months and years. The fact we deal with today is this: Increased spending by the federal government, additional centralization of power in Washington, and more complicated government are almost certain to occur. At the same time, there is much talk about the necessity for a drastic overhaul of the machinery of our federal government to meet the requirements of new programs and to enable our elected and appointed executives to work more efficiently. There is much talk of the need for what is called the "reform" of Congress, to make it less obstructionist and more likely to speed the Administration's programs to enactment.

Some overhauling of governmental machinery probably would be beneficial. It is conceivable that some changes in the operations of Congress are in order. However, it is well to keep in mind that any tampering with the checks and balances in our system of government involves hazards, and it is the responsibility of all of the people to see and understand those hazards. Many nations have experienced so-called "reforms" which resulted in an unhealthy concentration of power. Many nations have found too late that "efficiency" had eliminated some of the essential elements of a free society.

In this era of bigger and more complicated government and proposals for additional changes, it is essential for the public to understand what is at stake in each alteration. It is essential for the public to be supplied with facts and opinions through a communications system which is relatively independent of the self-serving pronouncements of politics and government propaganda.

Mr. Mollenhoff is a member of the staff at the Washington Bureau of Cowles Publications.

In the face of the problems of our democracy today, the independence of the American press is essential and indispensable. When I speak of the press in general terms, it should be understood that I am speaking of all the news media—newspapers, magazines, radio and television. I shall deal with them individually later on.

Only an informed public can make the decisions necessary for democracy to work, for there is no democracy when the leaders of a nation have killed or crippled the means for effective dissent. Only an independent press can provide the means —the facts and the opinions—necessary for effective dissent and opposition to the federal administration.

HOW FREE IS THE AMERICAN PRESS?

As a part of any analysis of the status of our American democracy, it is necessary to ask this question: "Just how free and independent is the American press today?" Answers would range from one extreme to the other. The press is *accused* of being "the tool of the Executive Branch," and it is *lauded* as "the greatest free press the world has ever known." It is possible to find evidence of press subservience to demonstrate a kept-press theory. However, there are daily examples of criticism leveled by the press at our highest officials, and of an aggressiveness which certainly indicates press independence.

It would be an error to try to picture the press as under the thumb of the government, but it would be just as great an error to picture it as completely free and independent. The whole problem of press freedom is complex. Full press freedom must include more than the simple freedom to print the facts and to criticize. It must also include the freedom to obtain facts even when those facts may be embarrassing to government officials. There must be a reasonable freedom from retaliation by public officials who resent criticism. In an analysis of press independence it is necessary to examine every power the government has to retaliate against the reporter, editor, publisher, commentator or broadcaster.

I shall try to avoid broad oversimplification, and shall deal with recent cases and existing conditions which relate to the subject of press independence. In many respects, the Bobby Baker case has put the spotlight on fine examples of initiative and independence by the press. Critical depth stories were researched, printed and followed with editorial comment, even when they reflected unfavorably on some of our highest government officials.

G. R. (Dick) Schreiber, of VEND, and Jack Landau and Larry Stern did an excellent job in helping kick off the vending-machine angles of the Baker investigation. Erwin Knoll, of the Newhouse Washington Bureau, cracked the story on the Carole Tyler townhouse. Julian Morrison, of the WASHINGTON DAILY NEWS, did an important job on the complicated "magic stock" deals. Wallace Turner, of the NEW YORK TIMES, did his usual fine digging job on Bobby Baker's gambling associates. LIFE's Bill Lambert and Keith Wheeler did great depth reporting on the financial affairs of Bobby Baker and Lyndon B. Johnson. THE WALL STREET JOURNAL had its usual comprehensive reports on both Matthew H. McCloskey, Jr., and the Johnson family television operations.

The United Press International demonstrated unusual courage and independence when Julius Frandsen and Grant Dillman made the decision to move Merriman Smith's story on the arrest of Walter W. Jenkins on a morals charge. They did it at a time when persons representing the White House had persuaded some newspapers, at least temporarily, to kill the story.

Perhaps the most consistently brilliant performance was that of the WASHINGTON STAR's John Barron and Paul Hope. The backing they received, the depth investigation they were able to do, and the space given their "Special Report" series were vital in keeping the Bobby Baker investigation alive and moving during periods when the investigation seemed endangered by lethargy and fear.

A great deal of press aggressiveness and press independence was required to get that investigation going in the face of all the opposition from political leaders in the Congress and the Executive Branch. Senator John J. Williams, of Delaware, could never have succeeded if it had not been for the help of an aggressive, independent press at several crucial points. The whole investigation would have fallen before it started if there hadn't been a corps of independent reporters who believed it was more important to push forward with the Bobby Baker story than to seek a favored position with the Congressional leadership or with the White House.

While there were many courageous ones, there were many who did not wish to become entangled in a dispute with the leaders in the Congress or the Johnson Administration. They did not want to risk being regarded as "unfriendly" reporters—as ones who caused trouble. There were many who preferred the easier life of the reporter who doesn't push embarrassing questions. Life can be simple for the "friendly" reporter who isn't too nosey and who is consistently available for "off-the-record" conferences with cabinet officials, for the White House "pool," or for "leaks" of stories which the Administration wants peddled.

I don't mean to criticize all of the reporters who accept "leaks" of administration stories, who take their turns in a reporter "pool" arrangement, or who attend off-the-record conferences. Certainly the wire-service reporters are compelled to retain a close relationship with agencies or with the White House, despite the overwhelming work load

they must carry and the great pressure they feel to be first with every routine bit of news. Certainly all working reporters should try to be reasonably agreeable and available for news "leaks" and off-the-record conferences.

My complaint is against those who permit dependence to become their pattern. The obligation to retain an independence must supercede the favors and pressures that any administration can use in trying to convert the press watchdogs into lapdogs. The problem of avoiding seduction by high political figures is not peculiar to the Washington scene. There is a good deal of the same temptation in our police stations, city halls, county courthouses and statehouses, where reporters often become closer to the offices they cover than to the newspapers they represent. However, the lapdog problem is accentuated in Washington because of the size and complexity of our federal government. A newspaper with just one or two reporters in Washington cannot expect them to be instant experts on everything, first on routine news stories, on a buddy-buddy relationship with all high officials, and also capable of handling investigations which demand time, initiative and independence.

The incompetence, superficiality and laziness that exists in the Washington press corps is not due to a lack of adequate personnel. There are plenty of bright and able newsmen in Washington who have sufficient experience and who have the desire to do work that means something. The problem is one of personnel management and incentives. More thought must be given to this subject if press independence is to continue in Washington.

Reporters, editors and publishers must understand what it takes to cover big government in Washington on any more than a superficial basis. If superficial color is what is demanded by editors and publishers, then that is what they will get in most cases. If they are satisfied with a well-phrased rewrite of self-serving government propaganda, then it is likely that they will receive nothing more. If cute or clever stories are demanded, they will be written. However, if a newspaper wants depth coverage on the problems of government, this also can be arranged. The Bobby Baker case was a demonstration of what the press can do in pushing a pussy-footing Senate committee into doing a job it did not want to do. It is far from a thorough investigation at this stage, but the Rules Committee has been pushed into doing much more than it would have done if the press had been less aggressive and less independent.

There must be more of this aggressiveness and more of this independence if the press is to fulfill its responsibility in handling controversial and complicated matters.

THE PRESS HAS A HARD BUT ESSENTIAL JOB TO DO

Democracy lives upon information about government and politics. The citizen and taxpayer must know what the government is doing, and must have the right to criticize the decisions and the activities of the lowest and the highest public officials. The right to vote is meaningless unless there is full information, some of which may reflect unfavorably upon public officials. The information is of little value unless there is a right to criticize without fear of retaliation by the government.

As our federal government becomes bigger and more complex, it represents more of a threat to our democratic institutions. Inevitably it becomes more difficult for the individual citizen to have a real understanding of what his government is doing. Government officials, with a variety of motivations, flood the public with a mass of mixed information, propaganda and plain misinformation. Often this information flowing from high government sources represents only a modified version of the big-lie technic of authoritarian governments. Often the public and the press must fight for the facts that are at variance with the government's propaganda line.

The power of big government to dominate the news represents a constant threat to the real spirit of democratic government. This threat is not necessarily attributable to either political party. Most political leaders of today are no worse in their motivations than were those of the past. It simply is a fact of life that it is more difficult to understand our $100 billion government than it was to understand the $5 or $1 billion ones of 30 or 40 years ago. The complex maze of big government does make it easier for the dishonest to go unnoticed, and for unscrupulous political schemers to deceive the press and the public.

Since we cannot abolish this bigness, it is essential that we learn to live with it. We must manage to understand it so that we can criticize it and control it. There must be a general public understanding of these basic points:

1. The importance of basic integrity and fair play in government decisions.
2. The necessity for a maximum of free access to information about government activities and decisions.
3. The importance of the press in bringing out information on the problems in government.
4. The importance of Congress in providing the information that the press and the public must use in arriving at conclusions on the operations of government.

I believe that a review of a number of cases which have been in the news in recent years can demonstrate the importance of each of these points. All of these cases are likely to continue in the news in the months ahead. They include the Billie Sol Estes case, the TFX contract investigation and the Otto Otepka case.

There has already been much political commentary on all of these cases, with allegations of

improprieties, conflicts of interest and careless government ethics. These problems are not peculiar to the Kennedy-Johnson Administration. It is inevitable that there be some corruption and mismanagement in government under any Administration, and we have certainly seen patterns of corruption under both the Republicans and the Democrats. The classic Republican scandals occurred during the Harding Administration, and included the major pay-offs in connection with the leasing of Teapot Dome oil reserves. The Eisenhower Administration had its "conflict of interest" in the Dixon-Yates power contract, its "imprudence" in the relationship between Sherman Adams and Bernard Goldfine, and its corruption at the FCC involving Commissioner Richard Mack. The tax scandals of the Truman Administration involved pay-offs and questionable decisions by many of the highest officials of the Bureau of Internal Revenue, the Justice Department and several other agencies.

There is one point in mentioning those scandals of past Republican and Democratic Administrations. It is to emphasize that no political party has a monopoly on virtue. Those of you who are familiar with my work will be aware that I have been active in the past in exposing problems involving several Republican administrations in Polk County, Iowa, and in the Truman and Eisenhower Administrations. I have tried—and the DES MOINES REGISTER AND TRIBUNE have tried—to avoid any political partisanship in dealing with these problems of corruption or mismanagement. I have tried to avoid any ideological bent, for I believe that the facts are more important than any ideology. I try to apply the same standards of conduct to public officials whether they be Democrats or Republicans.

THE BILLIE SOL ESTES CASE

The Kennedy Administration came into power in 1961 with vows to operate an open government, and with ringing pledges to take swift action against those involved in corruption or mismanagement. The Billie Sol Estes investigation was touched off by a little newspaper in Texas, the PECOS INDEPENDENT, and largely because of aggressive newspaper reporting, the activities of Estes were subjected to hearings by two committees of Congress and revealed a national scandal in the operations of the Agriculture Department.

It was Administration irritation with the critical stories in the NEW YORK HERALD TRIBUNE that resulted in President Kennedy's dropping his subscription to that newspaper.

The investigation of this case by the McClellan Subcommittee demonstrated the difficulty of obtaining facts which are unfavorable to a government department. Secretary Freeman, who apparently was uninformed on some aspects of the Estes case, made a loud defense in which he charged that Republicans were "ballooning" the whole Estes scandal out of perspective. He denied any favoritism, and then proceeded to try to hide or disregard the facts showing favoritism. The Department tried to discredit or muzzle N. Battle Hales, the one employee who had the courage to testify that he believed the cotton allotment transfers constituted "favoritism." In March, 1964, Hales was denied an in-grade promotion which is normally automatic "because the Estes investigation report is still pending." Yet, within a two-month period, Freeman's Department gave a "Distinguished Service Award" to Horace Godfrey, the administrator of the ASCS at the time of the Estes mess. This effort to punish the man who testified courageously does not promote honest independence. There has been too little press attention on this important point.

THE TFX SCANDAL

Two major stories of the past year—the TFX warplane case and the Otepka case—can serve to demonstrate how many Washington reporters and columnists failed in their role as watchdogs. They failed because they did not know their subject, or because they became propagandists for two political appointees. They failed despite the documented record made by committees of Congress. The TFX story involved the integrity of the spending practices in the Defense Department, and the judgment of Secretary McNamara. It involved a weapons-system contract which would exceed $6.5 billion—the largest single contract in the history of the United States and probably in the history of the world. TFX involved the judgment of Defense Secretary McNamara.

McNamara overruled the top-level Pentagon Source Selection Board which had favored awarding the contract to the Boeing Company on the basis of both price and performance. Testimony before the McClellan Subcommittee indicates that McNamara will waste more than $400 million by an arbitrary decision to hand the $6.5 billion program to the Texas-based General Dynamics Corporation. Despite the documented record, a few hero-worshipping reporters and columnists, feeding on Pentagon distortions, have been giving the public the line that McNamara's decision will somehow save the taxpayers a billion dollars. They have accepted factually-inaccurate smears against the McClellan Subcommittee members from anonymous Defense Department spokesmen. They have disregarded or rationalized the evidence of "conflicts of interest" which should have caused two of McNamara's top aides to disqualify themselves in the TFX decision.

McNamara overruled the unanimous recommendation which favored the Boeing TFX on the basis of a "superior performance" rating as well as a price that would be lower by $100 million to

$415 million, by the figures available to him at the time the decision was made. It was possible that McNamara could have been right, but certainly the burden of proof was on him to establish that he was right, since he overruled his subordinates to give the contract to General Dynamics. He signed a five-page memorandum of "justification," on November 21, 1962, which was loaded with errors, according to the record of the McClellan Subcommittee. One of the errors was "a little slip-up" on the entire performance rating of the General Dynamics plane. The performance rating was greatly inflated. Also, McNamara had a little error of $32 million and a little error of $29 million. To justify his decision, he made a claim that General Dynamics had greater "commonality" of parts in its Navy and Air Force versions which would result in great savings on maintenance, repair, spare parts and training. The experts, civilian and military, who testified on engineering and military matters, stated that the General Dynamics plane has little or no advantage over the Boeing plane in this area. One experienced aeronautical engineer declared that the idea of any substantial savings because of "commonality" was "poppycock."

Secretary McNamara said he could disregard the low bid submitted by Boeing because Boeing's cost figures lacked "realism." Boeing officials stated that they submitted detailed cost figures to the Defense Department and had "back-up material" available to demonstrate the realism of their bid. They said that the Defense Department never challenged their figures, but had arbitrarily tossed out their low bid. The McClellan Subcommittee proved that the only Defense cost figures available contained some rather dramatic errors—$291 million and $340 million. McNamara could not have been right if he relied on those figures, which he now admits were in error. What figures did McNamara have before him when he decided that Boeing lacked "cost realism" in making the low bid? When the auditors of the General Accounting Office questioned him about his decision, he admitted that he had no other cost study available. He said he made "a rough judgment" from his experience as an official at Ford.

McNamara told the GAO that he got the figures "out of his head." Comptroller General Joseph Campbell expressed his "surprise" that McNamara had no cost figures for such an important decision, and said that the GAO feels there must be written documents to support such multi-billion-dollar decisions. But that wasn't all.

McNamara downgraded the modern braking device—the thrust reverser—in the Boeing plane as being a risky engineering venture. The General Dynamics plane had a conventional dive brake which some say will make the plane obsolete before it goes into production. The Navy and the Air Force requested the "thrust reverser" in the General Dynamics plane because of its superiority. Experts have testified that it will cost $446 million more to equip the General Dynamics plane with the "thrust reverser" at this stage.

McNamara contended that Boeing's use of titanium in the wing structure was also "risky." On this point, the McClellan Subcommittee produced expert testimony from metallurgists, including specialists in titanium, who disagreed with McNamara. The experts testified that there was no unusual risk involved in the use of titanium in the wing structures, and that the use proposed by Boeing was conventional.

General Curtis LeMay and Admiral George Anderson, then chief of naval operations, approved the Boeing plane. They told McNamara that they had reservations about the General Dynamics plane, and called his decision wrong.

Granted that this was a complicated and technical subject, but it was not impossible, and the press, generally, failed to get to the heart of the matter. There were only about a dozen reporters who read the whole record of the TFX investigation, and a few who read enough to be familiar with the weakness of McNamara's position. However, dozens of apologists for McNamara have written authoritatively without the benefit of reading the record. They have written from Pentagon handouts and from confidential "inside information" straight from McNamara, from Assistant Secretary Arthur Sylvester, from former Deputy Defense Secretary Roswell Gilpatric, or from former Navy Secretary Fred Korth.

Why would Defense Secretary McNamara overrule a unanimous recommendation and make what experts regard as a "wrong decision" to pay the highest price for the second-best plane? He had help on this case from Gilpatric, the former lawyer for General Dynamics, and from Fred Korth, whose Continental National Bank of Fort Worth had General Dynamics for one of its best customers. And it should be no surprise that both Gilpatric and Korth recommended giving the contract to General Dynamics rather than to Boeing. Chairman McClellan and others have expressed the opinion that neither Korth nor Gilpatric should have had any role in the TFX contract, in light of their prior associations with General Dynamics, but many reporters and editorial writers, ignorant, gullible or lopsidedly partisan, could see no "conflict of interest" problem. Reporters whom I had worked with—and, I might mention, agreed with—on the "conflict of interest" in the Dixon-Yates case during the Eisenhower Administration, had no interest in going into the details of the roles of Gilpatric or Korth. Others who had been aggressive in pointing up the role of Adolphe Wenzell in the Dixon-Yates case wrote apologies for Gilpatric and Korth. In some cases it was ignorance of the facts. In some cases it was laziness

in dealing with a complex record. I am afraid that in a few cases it was political partisanship.

THE PERSECUTION OF OTTO OTEPKA

Most of the same factors were involved in the press failures in the coverage of the Otto F. Otepka case. For more than a year now, Otto Otepka has undergone a most vicious and oppressive ordeal at the hands of his superiors in the State Department. He has been lied about, put under surveillance, had his room bugged and his telephone tapped. He has been removed from his position of responsibility, ostracized by his friends, and in general persecuted in ways characteristic of a police state. If he had engaged in espionage or had been suspected of espionage, then there might have been some justification for the steps taken against him. That, however, is not the case. No one has alleged that he had done anything disloyal to his nation. *He is accused of having been disloyal to his State Department superiors by telling the truth to a Senate committee, and then by producing documents to prove that his superior had given untruthful testimony under oath on a material matter dealing with the operations of the security program.*

Otto F. Otepka became a State Department employee in 1953, shortly after the Eisenhower Administration came to power, and at the time of his Senate committee testimony he was chief security evaluator in that Department. Some reporters found that fact alone to be grounds for their hostility to him, and they characterized him as the last vestige of McCarthyism at the State Department. They did not know, or at least did not report, that Otepka was a career civil servant with no political ties, and that he had been transferred from the Civil Service Commission to the State Department because of his experience as a lawyer and security evaluator. Otepka believed in a strict security operation, but he was not an irrational man who saw a Red under every bed. In fact, it was Otepka who had recommended clearance for Wolf Ladejinsky in 1954, when some more zealous persons sought to label that career agricultural attache a "security risk." He had served with such distinction as a security evaluator that Secretary of State Dulles presented him the Department's meritorious service award in 1958, and early in the Kennedy Administration Deputy Under Secretary of State for Administration Roger W. Jones commended him as a skilled and balanced security evaluator. That was before direct conflicts of testimony developed involving Otepka and his superiors.

Otepka delivered three State Department documents to the Senate Internal Security Subcommittee to prove that he had been telling the truth. One of his superiors charged that this constituted "insubordination" and violation of rules. To some reporters, the delivery of documents to a Senate Subcommittee was justification for firing. They did not know, or at least they did not report, that Otepka delivered the documents to prove that he had been telling the truth with regard to the handling of a security matter. His testimony had been in conflict with that of one of his superiors, and he produced the records to prove he had been truthful.

Otepka delivered documents which also proved his superiors were wrong. To some State Department-oriented reporters and editorial writers, that was "McCarthyism." There are veteran reporters and editorial writers who do not understand the vital function of Congress in checking the Administration and operations of the Executive Branch. Many cannot tell the difference between a responsible investigation conducted by the late Senator Kefauver, Senator McClellan or Representative Blatnik, and one of the late Senator Joe McCarthy's free-swinging extravaganzas. Many didn't try to tell the difference. They are automatically against any investigations, and automatically mouth the Administration's line without regard for its inconsistencies or provable fallacies.

In their eagerness to oust Otepka, two State Department officials, John F. Reilly and Elmer Dewey Hill, took part in attaching a listening device to Otepka's telephone. A third official knew about it. All three testified under oath that they had no knowledge that any wire-tap, "bug" or other listening device had been attached to Otepka's telephone. Not until after a Senate floor speech warned of perjury did these three high State Department officials write letters to the Senate Subcommittee admitting the use of listening devices on Otepka's telephone. In their admission, however, the three officials explained that there was no listening on the wire and no interception of Otepka's calls. Since then, these letters—prepared by the State Department's legal office and approved by Secretary Rusk—have been established as inaccurate. One might even use a harsher term and call them false.

Electronic expert Hill has testified that he actually recorded more than a dozen conversations on Otepka's wire as part of a plan to get evidence for ousting him. He testified that Reilly knew of the recordings and had a special interest in one of them. The documented record shows what Senator Dodd has characterized as "perjury, falsification and lying" by three high-level officials who were trying to "get" Otto Otepka. Yet some newspapers have ignored this story. Others have continued to take the State Department's line that the proof of "false" testimony on the wire-taps is not connected with the charges against Otepka.

Although Reilly and Hill have resigned, they have not been criticized by Secretary of State Rusk. Rusk allowed Belisle to remain on in the State Department for weeks after he had become aware of the "untruthful" statements in the transcript. If Rusk and the State Department's legal office were misled by Reilly, Belisle and Hill, then they can be absolved of complicity in this

conspiracy to commit perjury. However, if they knew those letters were false, then they must share the blame. We can judge Secretary Rusk and other high officials only by their actions, since it was established that men in the State Department were involved in giving untruthful testimony, under oath, on a material matter.

What has Rusk done? (1) He took no action to indicate disfavor with Reilly, Belisle or Hill. On the contrary, he kept Belisle on the payroll. Reilly and Hill were permitted to resign with no derogatory marks in their personnel records stemming from their untruthful testimony. (2) Rusk is pressing ahead with the Reilly-instigated charges to oust Otepka. (3) When the Federal Communications Commission hired Reilly as a hearing lawyer, the State Department made no effort to advise FCC Chairman William Henry of what was contended to have been an "unauthorized" use of a wire-tap on Otepka, or of Reilly's untruthful testimony in denying it.

Why has Secretary Rusk acted in this manner? I shall not speculate on the rationale behind such bureaucratic brutality. The facts are clear. It is unnecessary even to discuss the motivation when the facts so clearly show a cover-up for the falsifiers and continued harassment of Otto Otepka. In many ways, the State Department's conduct has been as bad as anything Joseph McCarthy did in his most irresponsible moment.

But more outrageous than the State Department's actions has been the performance of the press. Some newsmen accepted the State Department's philosophy that dissenters like Otepka should be squelched, and Congress barred from the facts. There was aggressive reporting by a few newsmen—Earl Voss and Cecil Holland, of the WASHINGTON STAR; Willard Edwards, of the CHICAGO TRIBUNE; and Dom Bonafede, of the NEW YORK HERALD TRIBUNE—but much of it was lost because few State Department reporters would dig deeply enough to understand the record.

The Otepka case involves the effectiveness of the State Department's security program. It involves the integrity of many high-level officials in a department which is entrusted with vital foreign-policy decisions. Yet, with only a few exceptions, the press has ignored this major investigation, or has given it coverage warped to the State Department's distortions.

Fortunately, most reporting has been better than was the reporting on the TFX investigation and the Otepka case. Most stories are less complicated and take less concentrated study. On the complicated stories and the controversial stories, the press needs the help of Congress if it is to retain its independence and is to serve as an effective check on the Executive Branch. When the independence of the Congress is reduced, the independence of the press is curbed. When the threat of a congressional investigation is removed, sharply limited or otherwise compromised, the press has no power to force disclosure of information by the Executive Branch. Then newsmen are limited to what the agency officials wish to reveal about their operations, unless the newsmen are fortunate enough to have an inside source who will risk his job by cooperating. Limit the press to the information in handouts from the White House or any agency, and you will find it dominated by a theme on the glories of the incumbent Administration. Congressional committees, with all their faults, usually represent a diversity of political views.

OFFICIALS' OPPORTUNITIES TO MANAGE THE NEWS

Take away congressional hearings on controversial subjects, and the radio and television industry will be even more susceptible to government influence than it is today. There is no doubt that television is the most powerful communications medium today, but by its nature it suffers from weaknesses that limit its independence. Direct government control over television programs would constitute a most obvious threat to liberty and could arouse violent opposition. The more subtle erosions of independence often go unnoticed. Let us examine a few of them.

First, there are only three major networks that supply most of the nation's stations with news and public affairs programs. Thus, the diversity of viewpoints is necessarily limited. Second, all radio and television stations come under government control through the Federal Communications Commission. Although the networks and programing are under only limited control, it would be a short step to tighter government regulations, and there is constant uneasiness about that possibility. Third, two of the three networks have direct or indirect interests in government contracts in the communications and defense fields. Fourth, the mechanics of television require an access to government offices and cooperation from high government officials that newspaper reporters and magazine writers do not need. Fifth, the great public interest that has grown up about, or has been stimulated in, the President and his family places the Washington bureaus of the major networks in a delicate position. There is a demand for exclusive film of the President, the First Lady and other family members. Each network must seek to remain in a position to compete for these exclusive shows, and the White House has complete control over cooperation on them. There is no question about the distinct competitive advantage in being regarded as friendly to the White House and the Administration generally.

The combination of all these factors makes it unlikely that the networks will be highly aggressive in presenting critical material regarding any incumbent president or his top political appointees. The only exceptions will be the straight reports of charges made by a political opponent, or of

criticism that has originated in congressional hearings.

At the same time, newspapers and magazines have become more dependent upon cooperation with the Administration for the color and inside information for exclusive articles. Also, the size of the government makes the Washington reporter more dependent than he used to be upon the agencies' public-relations offices.

Further limiting the independence of the press are such orders as the Sylvester directive at the Defense Department which requires that all officials, military and civilian, report all conversations with reporters to the Department's information office before the end of each working day. Also, the functions of the Army, Navy and Air Force information offices are being cut back, and the information is being centralized in the office of Assistant Defense Secretary Arthur Sylvester.

EDITORS AND THE PUBLIC MUST DEMAND FULL REPORTS

Despite these steps, actual government control of the press does not exist today because of resistance to news-distortion tactics. However, the many subtle pressures at work can result in a critical erosion of press independence in the future. The responsibility for continued press independence is broader than the responsibility of reporters. The responsibility must also rest on editors, publishers, broadcasters and the general public. I mention the public's responsibility because in the highly competitive business of attracting public attention, newspapers must give some heed to public demand, or go out of business. If the public requires that they put consistent emphasis upon the entertainment aspects of public affairs and on superficial color, then the newspapers, magazines and television will do so. If the public fails to distinguish between thoughtful, balanced commentary and big-government propaganda, then the trend will be toward less and less disguised Admininstration propaganda.

It is the responsibility of the public to make the distinctions, to reward independence, and to treat the superficial and the government-propaganda-peddling with fitting contempt. But even if the public is lacking in perception, it is the responsibility of our editors and publishers to resist the public's whims that tend to encourage superficiality and destroy independence. Editors must seek to lead their readers toward depth of understanding of government and politics, they must encourage dissent, and they must lead people to challenge the unsupported, self-serving declarations of government officials.

I know there are many independent editors today, for I have worked for some of the best for more than 20 years. I know there are a few others with the same tough non-partisan independence of Frank Eyerly, managing editor of the DES MOINES REGISTER. But there are too few who are as consistent in their independence. There are too few who enjoy a tussle with city hall, the county courthouse, the statehouse or a national administration. There are too many editors and reporters who make a few stabs at aggressive independence at some point, and then retreat to the philosophy immortalized by Sam Rayburn and Bobby Baker: "If you want to *get* along, you have to *go* along."

PHYSICIANS HAVE NEW RESPONSIBILITIES

As doctors, it would be simple for many of you to take the same attitude as Sam Rayburn and Bobby Baker, and go along with authoritarian bureaucrats even when you know they are wrong. If there is waste, mismanagement or fraud in the federal medical programs, it might be much easier for you to turn your back on the problem and rationalize that it isn't your responsibility. But I am trying to stress that it *is* your responsibility as citizens to try to make the programs work in the most efficient and honest manner. You have an added responsibility as doctors when the corruption or mismanagement involves an area in which you have special knowledge or expertise.

You have a stake in clean government. You have a stake in an independent Congress as a check on the Executive Branch. You have a stake in the independence and integrity of a free press. Your future freedom may be contingent upon how well you understand your role in helping check the power of big government.

Community Health Week November 7-13

The 1965 observance of Community Health Week will take place the week of November 7. This year's CHW theme is "Teaming Up for Better Health."

The Community Health Week project, only now in its third year, has gained substantial stature already as a national event, according to reports from the AMA. State and county societies, in increasing numbers, are developing programs, many times in cooperation with allied or voluntary health groups, to call the public's attention to the remarkable advances which have been made in the quality and quantity of medical care.

The type of local program presented is entirely in the hands of the county medical society. Materials, including news releases, speech texts and other aids, are assembled in a kit which is widely distributed by the AMA well in advance of Community Health Week.

The Iowa Medical Society is circulating appropriate interpretive material on Community Health Week to the editors of weekly and daily newspapers in Iowa, and to the program directors of state's radio and TV stations. Several appearances by Society officers on radio and TV programs are being arranged. Governor Harold Hughes has also issued an official proclamation (see page xxvi) designating the period from November 7 to 13 as Community Health Week.

Scientific Articles

Radiation Therapy and Your Patient

The Erskine Memorial Lecture

J. W. J. CARPENDER, M.D.
Chicago

It is indeed an honor to be asked to address this Society, and an even greater honor to be asked to deliver the Memorial Lecture named after Dr. Arthur Erskine, a radiologist who was prominent in the affairs of this Society, as well as in radiology in this state and in the entire country.

My title may be somewhat misleading. I do not intend to cite a lot of statistics, and I am not going to show you a single picture of an unusual and spectacular result. As a matter of fact, I have no illustrations at all. My purpose today is to indicate what radiation can do for your cancer patients and what it cannot do, and also to give you a brief history of supervoltage therapy and to tell you where radiotherapy stands today.

The radiations used today vary considerably. We have low voltage x-rays, mostly used in dermatologic conditions; there are the ortho or 250-KV x-rays, still the most common installations; and then there are supervoltage radiations produced either by x-ray machines or other devices operating above 1 million volts, or by Cobalt-60 devices. In addition, radium and Cobalt-60 are used as interstitial or intracavitary sources of radiation, and several radioactive isotopes are used internally for the treatment of certain specific conditions.

These radiations may be used either for cure or for palliation of symptoms such as pain, bleeding or cough; but one should never use them just for the sake of doing something to the patient. Too often I have been asked to treat a patient when the referring physician knew full well that nothing could be accomplished. Such requests are usually accompanied by the remark, "We have got to do something." In such cases it is much better for all concerned to use liberal doses of narcotics rather than to waste everyone's time and money, besides making the patient even sicker than he was. In other words, let's use radiation when it will do something *for* the patient, rather than when it will just do something *to* the patient.

Although the number of supervoltage installations has increased at a phenomenal rate over the past 15 years, the most prevalent type of equipment is still the orthovoltage, and x-rays at that level can still accomplish a great deal. In fact there are some conditions which are better treated by radiation up to 250 KV, rather than by radiation at the level of 2 million volts. And remember this—just because Cobalt-60 is a product of the atomic pile, there is nothing miraculous about it as far as the cancer cell is concerned. If equal amounts of ionizing radiations are delivered to tumor cells from the cobalt unit or the 250-KV machine, the cells cannot tell the difference. Of course, however, it cannot be denied that in many instances the delivery of the dose of radiation is easier when the higher energies are used.

I have said that some conditions are better treated by radiation up to 250 KV than at the higher levels. For example, basal- and squamous-cell carcinomas of the skin, including the eyelid and lip, fall into this category. Supervoltage radiation not only delivers a considerable dose to underlying tissues, but the maximum dose falls at a point some distance below the skin surface, so that it is even possible to underdose such a lesion while giving a large dose to underlying tissue, thus damaging the deeper structures and failing to

Dr. Carpender is a professor of radiology at the University of Chicago Medical School, and president of the American Board of Radiology. He made this presentation to the Iowa State Medical Society on Tuesday, April 13, 1965.

cure the tumor. In treating such conditions as leukemia cutis and mycosis fungoides, the lowest possible quality of radiation must be used in order to spare the bone marrow which underlies most of the widespread lesions in these diseases.

There is another hazard in the use of supervoltage radiation, particularly in the hands of the uninitiated. Radiation from 2-million-volt machines or from Cobalt-60 units do spare the skin, and since skin reactions have frequently been the limiting factor in the use of lower-energy radiations, there has been a tendency to go further with tumor doses. The consequence has been that many patients have had severe damage to deep-seated organs from overdoses because the skin reaction warning was no longer there. Of course the referring physician likes supervoltage because it spares him the need to explain to his patient that the skin reaction is a necessary evil and an expected part of treatment. But sometimes these skin reactions must occur if the treatment is to lead to a cure. The patient should never be told that the reaction is a burn, for *burn* is a term that has a bad connotation. Its use may even lead to legal action, and since it is anathema to radiologists, they even are inclined to give doses which are not curative in order to avoid the reactions and consequent criticism. This just does not make sense.

Excellent palliation can often be accomplished with the lower voltages. Particularly in the treatment of disseminated superficial lymphomas and Hodgkin's disease where the doses needed are low, the skin reaction amounts to a moderate erythema and later pigmentation, with frequent complete disappearance of the local lesions.

With either ortho or supervoltage x-ray, excellent palliation can be obtained where painful bony metastases from carcinoma of the breast or prostate have occurred. This is also true in the case of soft-tissue metastases from a breast malignancy. When treating spinal metastases, we prefer to use supervoltage because of the reduced skin damage. Frequently these patients become bedridden, and the less skin damage there is, the less chance there will be for decubitus ulceration to occur. Supervoltage occasionally has another advantage. Although palliative results are not quite so good, one can give a fairly large dose of radiation in a single treatment, thus reducing the time that the patient must spend in the hospital or the number of out-patient visits needed. Much less success in palliation is obtained in metastases from lung tumors, hypernephromas and other more resistant lesions.

There are some institutions where radiologists believe in using supervoltage radiation in the postoperative management of carcinoma of the breast, but we at Chicago do not use it for that purpose. We have read of too many cases of mediastinal fibrosis, of shoulder fixation and of lung damage when higher energies have been used. The 250 KV is entirely adequate, and with our method of high dose but ultrafractionation, we have a local recurrence rate of 4 per cent, which is lower than that in other reported series, in some of which the rates have been as high as 18 per cent. Complications from the radiation are minimal.

SOME OF THE HISTORY OF RADIATION THERAPY

Although there has been a marked increase in the number of supervoltage units over the past 10 years, this form of therapy is nothing new. It has had limited use in this country, in various devices, for more than 30 years. As a matter of fact, Stenstrom and Failla, famous radiation physicists, both designed so-called radium bombs in the early 1920's. Stenstrom's unit, containing 1.6 Gm. of radium, was installed at what is now Roswell Park Memorial Institute, in Buffalo, and Failla's at Memorial Hospital, in New York. The latter was a 4 Gm. unit. The major difficulty with these units, and really with all radium-teletherapy devices, was that the dose rate was exceedingly low even at short treatment distances. A unit in Buffalo, installed in 1930, gave 3.3 r at 10 cm. Terribly long times were required for the treatment of tumors close to the body surface, and deep lesions could not be treated.

Early x-ray therapy machines were rather puny things. Voltages were generally less than 100,000, but Coolidge, of General Electric, produced a tube in 1913 which would take 200,000 volts, and so-called "deep therapy" was born. Until then it had been impossible to treat deep-seated tumors adequately. Dr. Dale Trout, formerly of General Electric, reports that a review of the literature of that time shows little difference from the present. The news writers of that time were no less certain than are their present-day successors that a cure for cancer had been found. Then they were writing about 200,000 volts; now they write about Cobalt-60, betatrons and linear accelerators, not to mention cyclotrons.

The first large radium units had provided a clear indication of the need for high-energy equipment, and despite the enthusiasm for therapy at 200 KV, further developments took place. The next advance was in 1930, when Lauritson and his coworkers at Cal Tech installed two 750,000-volt transformers connected in series to a 35-foot-long x-ray tube. Imagine the space required for that! The machine was rated at 600,000 volts. At the American Congress of Radiology held in 1933, Mudd, Emery, Meland and Costolow described the use of that equipment in treating 285 cancer patients. Earlier, Lauritson had reported on the physical characteristics of this quality of radiation; and his papers were most important in explaining the clinical possibilities of the higher-energy radiations. About that same time, Coolidge and his colleagues had designed and installed a 750,000 volt unit at Memorial Hospital, New York.

Pioneer physical and biological work was done with that unit by Failla, Quimby and others of their staff, in addition to the treatment of 150 patients between 1931 and 1934.

In the summer of 1934, Dr. Henry Schmitz obtained an 800,000-volt unit at Mercy Hospital in Chicago, and very shortly thereafter Swedish Hospital in Seattle acquired a similar unit. At the same time the University of California installed a radio-frequency apparatus which operated up to 1,000,000 volts. In 1936, Dresser, Trump and Van de Graaff described a one-million-volt electrostatic generator which had been installed at the Huntington Memorial Hospital in Boston. Also, Harper Hospital in Detroit got a 600,000 volt unit, as did Lincoln General Hospital, in Lincoln, Nebraska, and the Los Angeles Tumor Clinic. Miller Hospital in St. Paul was installing a one-million-volt unit; and by 1936 there were ten 400,000-volt units within several hundred miles of Cleveland. For the next 15 years there was much accumulation of data on the clinical effects of this high-energy radiation. Swedish Hospital in Seattle, Memorial Hospital in New York and Mercy Hospital in Chicago have been the outstanding contributors. Many of their early cases are still being followed.

But you should have seen some of this early equipment! It was air-insulated, and as a consequence the space needed was large, as I have mentioned. The tubes were huge, and what periods of high humidity could do to produce arcing and sparks was a caution. But gas insulation was soon a by-product of the home refrigerator, and in 1939 there was a radical change. In that year Charleton, Westendorf, Dempster and Hotaling put a one-million-volt transformer into a tank 7.5 feet long and 4 feet in diameter. The insulation was the refrigerant freon, under pressure. The first three units went to Memorial in New York; St. John's in Cleveland; and Roswell Park. One difficulty was soon discovered. If the room got too cold during the night, the freon liquified and the machine would not operate in the morning until things warmed up. Also these units—as was Trump's electrostatic generator, re-designed for freon insulation—were under continuous vacuum pump, with all the consequent difficulties of such a system.

About that time it became quite obvious that a war was coming, and the industrial demands for x-ray examination of welded seams led to the development of a sealed tube, as well as to the use of sulphur-hexafluoride for insulation, a new refrigerant gas which did not liquify as readily as freon—a distinct advance over pumped tubes in freon. Medical adaptations were shortly made from those industrial units.

And then the war did come, with the Manhattan project, the atomic pile and the abundant production of artificial radioisotopes. What names were heard in that period of growing hope! Cobalt 60, europium, caesium, iridium and others were to be the end of cancer, the end of the devilish crab's grasping at the vitals of humanity; but again the sights had been raised too high. The evidence was there—Cantril and Buschke had evaluated their supervoltage equipment—there had been reports from Roswell Park, from Memorial, from Mercy and the Los Angeles Tumor Institute; but these new radioactive materials were a product of the atomic age and thus *must* achieve success.

The first radiocobalt unit was constructed in 1949 by the General Electric X-ray Company for the M. D. Anderson Hospital, of Houston, Texas. The unit was designed by the late physicist L. G. Grimmitt and Dr. Gilbert Fletcher. The protective shielding was hevimett, a tungsten alloy, and ultimately weighed only one-third as much as such a unit constructed of lead. It eventually employed a source of cobalt of 1,000 curies. Since then there have been a wide variety of cobalt units designed by and produced for the radiotherapist, or designed and sold to the radiotherapist—some good and some bad.

At the Argonne Cancer Research Hospital, we have a "one of its kind" unit. Because this hospital is operated for the Atomic Energy Commission, we are able to use uramium for shielding, and by reducing size and weight of our housing, we are able to get very tiny, enormously active sources. A new source which will go into our unit this spring will be the equivalent of 4,000 Gm. of radium, or $80 million worth.

Earlier, Lawrence had developed the cyclotron and Kerst the betatron, and presently the linear accelerator was developed by Fry, in Great Britain, at the same time as Hansen and Ginzton were working on the same lines at Stanford. General Electric was making a synchroton of 70 million electron volts to produce x-rays. Here there *must* be a cure for cancer—22 million volt x-rays, 440 million volt protons, electrons from 30 to 60 million volts! A radiocobalt unit on every street corner!

SUPERVOLTAGE X-RAY HASN'T BROUGHT THE MILLENIUM

Where has all this brought us? As I said earlier, many reports are already in—reports by seasoned and deliberate observers like Cantril, Buschke and Stone, and the people at Memorial in New York. Supervoltage is better than conventional 250 KV in many conditions. Those of us who have used supervoltage are all in agreement that it spares the skin, that the systemic reactions are less, that there is less bone absorption and side scattering, and as a consequence, better knowledge of dosimetry. But I believe we are also in agreement that we need expect no startling increase in cure

rates from our supervoltage machines. There may be some small advances, but they are difficult to evaluate. They perhaps have been due to more meticulous care in applying the radiation, advances in diagnosing the limits of the disease, and better selection of appropriate cases. Time will perhaps provide an answer.

Also, supervoltage has produced other problems. These are economic and sociologic. Supervoltage units are not inexpensive in themselves, and the cost of housing them varies from large to stupendous. Who is going to pay the cost of treatment? Certainly if the bulk of cancers are to be treated by means of supervoltage, patients cannot be expected to bear the brunt of the expense.

There is another factor, and it is what I referred to as the sociologic one. I do not believe that it is possible to apply supervoltage radiotherapy adequately without the services of a competent hospital physicist. In Great Britian the hospital physicist has long since achieved a position of importance and prestige—and adequate salary. In this country, just exactly 76 hospital physicists have been certified by the Board of Radiology. We are not offering sufficient prestige and salaries to attract more of them. That a few men like Failla, Glassner, Quimby and Marinelli have made it on their own is to their credit and to our everlasting benefit.

YET THE EFFECTIVENESS OF RADIOTHERAPY IS INCREASING

Regardless of whether we administer ortho or 250 KV radiation, radium or intracavitary radiation, there are some tumors which just do not respond. Malignant melanoma, except in one very special case, does not respond to doses that normal tissues can tolerate. The special case is melanoma of the eye, which often can be cured by radiation. Most fibrosarcomas do not respond, but an occasional one will, and no one can tell which one. In these cases, a trial of radiation is indicated. Most tumors of the upper airway will respond, and many can be cured. Tumors of the upper gastrointestinal tract and of the bowel do not respond, nor do those of the liver, gallbladder and pancreas. In many cases of oral cancer, there is a choice between radiation and surgery. Based on the size and location of the lesion and the comparable abilities of the surgeon and radiologist, the choice must be weighed carefully.

At our institution we radiologists run a joint clinic with our ear-nose-and-throat service. All new head and neck tumors, all patients under treatment and all follow-ups are seen by both otolaryngologist and radiologist. The patients like it, we like it, and we are convinced that our patients get better care and that by such close cooperation, we choose the treatment that is best for the particular case. There is the same sort of cooperative effort between radiology and thoracic surgery. I recommend such arrangements to you as the best way of handling these problem cases.

Early cancer of the vocal cords is becoming more and more a radiotherapeutic disease. Consider our own experience. Of 36 cases of Stage I and II laryngeal cancer, 29 were five-year-cures by means of radiation. Very careful follow-up detected the failures soon after the radiation was given, and surgery was done. There were only two failures in the seven stubborn cases. That means that 34 of the 36 were cures, but more important, 29 of the patients retained their voices. The ability to communicate by means of the spoken word is one of the major distinctions between man and the lower animals.

Despite a raucous minority of physicians who advocate surgery, radium combined with x-ray is still the treatment of choice for all but carcinoma *in situ* of the uterine cervix, and the results are really good. In Stage I, some series show as high as 90 per cent five-year disease-free survivals. Carcinoma of the endometrium is usually treated by a combination of surgery and radiation.

In carcinoma of the lung and carcinoma of the esophagus, the results of either surgery or radiation are disappointing. Widespread random studies are now underway in an attempt to evaluate preoperative radiation. I am convinced that with this combination of methods we may see a definite overall improvement in the treatment of these diseases. It may even apply to carcinoma of the rectum.

Despite the advent of the chemotherapeutic agents, radiation is still used as the primary treatment in most of the lymphomas, especially those that are localized when first seen. More and more long-term survivals—some even say cures—are seen when vigorous radical radiation has been used at the onset. Even in lymphosarcoma of the stomach, a number of cures have been reported. In treating lymphosarcomas and reticulum-cell sarcomas of the abdominal organs, we make a standard practice of doing intravenous pyelograms and inferior vena-cavograms. We frequently find that periaortic nodes are involved, and thus we treat the entire abdomen. These studies are also used when lymphomas involve the inguinal areas. Inguinal nodes are frequently the surface projections of an unsuspected iceberg. Chemotherapy is reserved for the patient with disseminated disease beyond the scope of x-ray treatment.

Bone tumors in general, sarcomas of muscle or fatty origin, or fascia tumors do not respond, and like melanomas should not be treated by radiation. Fewer and fewer radiologists are willing to treat benign tumors of any sort.

Although surgery seems to hold the ascendency in the treatment of tumors of the urinary bladder, some good results are being reported when super-

voltage radiation has been used, and excellent palliation has been obtained even in advanced cases. As for hypernephromas, a British study of a very large number of cases indicates that about 10 per cent more patients will survive five years when postoperative radiation has been given. The common malignancy in children, the Wilm's tumor, is very sensitive to radiation, and surgery followed by an immediate course of Actinomycin D and radiation seems to hold promise. On the other hand the neuroblastoma, while sensitive, is rarely curable, but palliation is good. Seminoma used to be considered a disease with a very bad prognosis, but now when it has been discovered early and treated by adequate radiation therapy to the node-bearing areas, it is curable in over 80 per cent of cases. Even when definite nodal involvement is present, many patients can be cured. Here supervoltage makes the job easier. Other testicular tumors do not respond so well. Teratomas are rarely cured, and choriocarcinomas almost never.

Results in the treatment of brain tumors have been most disappointing, but we have been running a series of astrocytomas treated in conjunction with tri-iodothyronine. The results give some indication that we may be increasing survival time, but the patients must be very carefully selected. We try to push the basal metabolic rate as high as 30 or 35 during the entire course of treatment, and these patients must be very carefully watched for signs of overtoxicity. Two special tumors of the brain have unusual characteristics and are often curable. Medulloblastomas and ependymoblastomas have the habit of shedding cells, which then are free in the spinal fluid and may seed anywhere in the cerebrospinal axis. We believe, as do many others, that medulloblastoma patients should have treatment to the entire brain and spinal cord, including the cauda equina, and that the portals should be single rather than multiple. In ependymoblastoma cases, some feel that treatment of the spine is necessary only when tumor cells have been found in the spinal fluid.

Some mention should be made of the radioisotopes. First and foremost is radioiodine, which is used primarily in the treatment of thyrotoxicosis, but about 15 to 20 per cent of thyroid malignancies do respond, and there have been a few reported cures. Phosphorus-32 at one time was considered the treatment of choice for the chronic leukemias, but it has largely been supplanted by the chemotherapeutic drugs. It is still widely used in polycythemia vera. Radioactive gold-198 has been frequently used, as was radioactive chromic phosphate, for control of malignant pleural effusions and ascites due to tumors. The results were not spectacular, and substances such as nitrogen mustard are easier to obtain, have no radiation hazard to the user, and work just as well.

Several radioactive materials have been used as substitutes for radium and radon. Tapes loaded with iridium, small grains of radioactive gold and radioactive chromium have had some success, but in my opinion, radium is still best, when it is available. All of these applications are complicated, and are best done by a radiologist.

ADJUNCTIVE THERAPY

Cancer patients are not easy to manage. Most of them are terrified of their disease, and rightly so. Except for the rare patient, we believe that they should be told the entire truth about their condition and the prognosis. It is not necessary to be blunt and to use the word *cancer,* but a truthful approach will often set the patient much more at ease. I have found that most of those people really know the diagnosis, and are happy to have the truth. When they are offered lies and evasions, as if they had no intelligence, they promptly regard the physician as a person of no intelligence. Many of them have pain, and liberal use of analgesics is in order in such cases. When they have nausea and vomiting, there are many drugs which will help. For the anxious ones, the tranquilizers are most useful. Good caloric intake, and adequate choice of diet and cooperation between physician and dietitians are important. But above all, daily sympathetic talks by the radiologist are essential. One must lend a sympathetic ear to a multitude of complaints, many of which have nothing to do with the condition under treatment, but such listening is a part of being a physician, and should never be neglected.

A GLIMPSE OF THE FUTURE

And what of the future? I believe that radiotherapy in whatever form it may evolve, will be dependent on biochemistry for any great advance, and I believe that this will be true of supervoltage as well as of any other form of ionizing radiation. We may have substances that will enhance the action of radiation on tumor cells, or ones which will inhibit its effect on normal cells. We may be able to increase the intracellular oxygen tension in tumors, or decrease it in normal cells. We shall certainly require some outside support for these studies and for supervoltage installations, and I hope we shall ultimately confine supervoltage efforts to large centers. But heaven forbid that we have federal control of medicine!

I think it unlikely that we shall have many cyclotrons for positive ion beams, even though the Berkeley group have shown that they can destroy the pituitary with a proton beam from the 184-inch cyclotron. It also seems unlikely that neutron-capture therapy will prove to be widespread or of much value.

Increased use of supervoltage radiation possibly could have one further advantage—a definite ad-

vantage to the patient. It is a well-known but deplorable fact that many x-ray treatments are given by technicians with but little supervision from radiologists. This cannot be done in the case of supervoltage. A closer relation between the radiologist and his patient and daily contact between them will result in better care for the patient. A radiologist engaged in any form of therapeutic practice in this branch of the healing art should be allowed to admit his patients to the hospital on his own service, in beds under his control. He is first and foremost a physician. The demands of supervoltage may force this development, since other physicians are not well enough acquainted with the problems of patients who require such treatment.

Dangers of radiation damage increase with energy. Because higher-voltage radiation is easier to administer, because, as I have said, the usual skin reaction is not present as a warning sign, and because the patient is not so sick, the radiologist who is uninitiated in such therapy may go too far. Additional training for those who are to use supervoltage equipment will require a reduction in the number of institutions where such treatments can be given, but that limitation is a desirable one.

We may have access to the finest radiation equipment in the world, but without properly trained and experienced personnel to run the machines, more harm than good may result to the patient. Often better results can come from an experienced radiologist's using a small stock of radium and an ancient orthovoltage machine than from the neophyte or unskilled person with a new and fancy Cobalt-60 unit.

CONCLUSION

I should like to emphasize an earlier remark. Don't ask the radiologist to treat tumors which are well known to be unresponsive to radiation. Don't ask him to treat hopeless cases just for the sake of doing something to satisfy yourself and the patient's family. Don't insist when he says he can't help. Always do something *for* the patient—not just *to* the patient. Where there is a choice between surgery and radiotherapy, and where equal abilities of surgeon or radiotherapist can achieve equal results, consider the functional result of radiation therapy as compared with the often mutilating results of surgery. Remember the results in the laryngologic cases already mentioned. And finally, remember that with modern radiation therapy most surgeons now admit that they have no problems of any serious proportions when they operate on the radiation failures.

Panel Discussion: Placenta Previa

Use of Radiographic Technics

FRANK M. BEHLKE, M.D.
Dallas, Texas

I SHALL DISCUSS the methods by which placenta previa can be recognized radiologically. Because of the variety of methods available, I think a historical review would be a proper approach to an analysis of the roentgen procedures that have developed over a number of years.

Amniography. The first attempt at visualizing the placenta was devised by Menees, Miller and Holly in 1930. Their technic is called amniography. They found that the injection of a strontium iodine solution through the abdominal wall into the uterine cavity increased the radiographic density of the liquor amnii, revealing the placenta as a concentric thickening of a lesser density on the uterine wall. Reports of fetal death following the use of strontium led to a search for less toxic agents, and uroselectin-B was utilized in 10 patients by Kerr and Markey in 1933. However, uroselectin-B apparently provoked labor, and it was therefore rejected.* Inserting a needle through the abdominal wall was viewed with some apprehension, and a few fetal deaths and injuries to the cord were reported. However in 1953, Savignac reported on nine mothers in whom he had injected 70 per cent Diodrast, using the amniographic method, and had found it highly accurate in localizing the placenta. In no instance had he complications.

Intravenous placentography. A second roentgenographic method for visualizing the placenta is intravenous placentography. In animal experiments in 1932, Ehrhardt was able to differentiate the placenta from the surrounding tissues following the intravenous injection of thorium dioxide, a radiopaque substance which is also radioactive. However this substance fell into disrepute because of its radioactivity. In 1939, again pursuing the intra-

At the time of this discussion, Dr. Behlke was a faculty member at the U. of I. College of Medicine.

* We are now aware that injecting any contrast fluid into the amniotic sac without initially withdrawing a similar or greater amount may incite labor.

venous method of placental localization, Ehrhardt was able to identify the placenta in animals through the use of triiodostearic acid phenyl and ethyl esters.

Olson, in 1941, working with contrast hepatolienography, reported visualization of the placenta. In 1960, Goodlin and his associates, at Minnesota, reported on 25 cases in which they had used the intravenous method of placental localization. By injecting about 75 cc. of high-density agent into the antecubital vein in about 3 seconds and then getting a delayed 7-second exposure, they reported being able to see a placental arterial phase and also a sinusoidal filling phase approximately 7 seconds after injection. They experienced no untoward difficulties. When one uses these contrast agents with rapid-injection technics, the patient may experience momentary flushing or a sensation of heat, and she should be forewarned of it. Goodlin accurately localized five cases of low-lying placenta and two cases of a major degree of placenta previa by this method, and he highly recommended it.

Arteriography. A third method available is arteriography. Though translumbar aortography has been with us for about 30 years, it has been only within the past decade or so that arteriography has come to the fore as an acceptable and common procedure. In 1951, Santi reported the use of translumbar aortography, utilizing the radiopaque-filled sinusoids of the placenta for localization and definitely establishing the method as another means of direct visualization with 100 per cent accuracy.

In 1953, Seldinger reported a new technic for visualizing arteries and vessels by the femoral route. It is called the retrograde femoral arteriographic method of Seldinger, and is a very common procedure in a majority of hospitals for seeking out lesions in the vascular system. With the Seldinger technic, one can thread a catheter through the femoral artery, retrograde, and can selectively inject a hypogastric artery or the aortic bifurcation and visualize the placenta with 100 per cent accuracy. There are occasional complications with this procedure, however, such as intimal rents in the vessel, or hematomas and vascular spasm.

Soft-tissue placentography. Another method, soft-tissue placentography, holds quite a bit of importance even today. It was first described in 1934 by Snow and Powell, and a host of reports following their studies indicated that it was a very good method for visualizing the placenta. According to the reports, it was 90 to 98 per cent accurate. However it should be recognized that the uterine wall, the amniotic fluid and the placenta have no actual differences in density, and at times one may be misled into thinking he sees a placental shadow, when actually he sees an accumulation of fluid and soft tissues superimposed. Therefore this method is not a totally reliable diagnostic technic, but nevertheless it is simple to perform and even today it is considered the method of choice by many radiologists.

Tomography. Tomography, laminography or planography never gained widespread use as a method of placental localization. In 1941, Lloyd and Samuels tomographed five suspected cases of placenta previa, and their diagnoses proved correct in three instances. The major objection to the tomographic method is that the patient and the fetus undergo an undue amount of radiation. Therefore, this method has never gained much support.

Cystography. Indirect placental visualization by cystography was reported in 1934 by Ude, Weum and Urner. They filled the urinary bladder with a contrast agent, and utilizing the measurement from the dome of the bladder to the presenting part, were able to determine whether an object was interposed. Usually it was the placenta. However, this method also was criticized because it did not permit visualization of the placenta. A take-off from this method was air insufflation of the rectum together with the cystogram, but this, you can understand, would lead to difficulties with retention of air plus distention of the urinary bladder.

Displacement. Displacement is another way of interpreting the roentgenogram in an attempt to localize the placenta. Ross Golden and Robert Ball, in 1941, stated that with the patient in the upright position, a film of the abdomen should demonstrate the fetal head lying in the mid-coronal and mid-sagittal planes. A certain degree of displacement would constitute indirect evidence of placenta previa. This also has been objected to on the grounds that it is not very accurate.

Radioactive isotopes. The first men to use isotopes for this purpose were Brown and Veall, in England in 1952. They utilized an intravenous injection of radioactive sodium and thought they achieved a high degree of accuracy in localizing the placenta. Since that time, multiple other radioactive isotopes have been utilized with increasing accuracy and with minimal radiation to the fetus and mother.

Placental calcification. Another method that is neither generally used nor recognized is placental calcification. Brehm reported placental calcification in 1939, and Schonig reiterated in 1945 that the placenta calcifies, and theorized that calcium is deposited in the necrotic tissues surrounding the ends of the villi as well as in the superficial layers of the decidua. Masters and Clayton supported that idea in 1940, and in 1943 Amy Fleming demonstrated placental calcification in 50 per cent of obstetrical patients examined after the thirty-sixth week of gestation. In England in 1954, Blair Hartley utilized a low-KV technic and a firm compression band, and interpreting high quality films with a special view box, was able to demonstrate placental calcification and localization in 31 per cent

of cases at 32 or more weeks of gestation. Furthermore, when his figures were questioned by other radiologists and obstetricians, Hartley reviewed 252 consecutive placentas after they had been removed from the uterine cavity past 36 weeks, and demonstrated calcification in 90 per cent of them on plain-film roentgenograms. Here at University of Iowa Hospitals, we have never been able to attain anywhere near that degree of accuracy in localizing the placenta by means of calcification.

Gravitational placentography. For a number of years at the University Hospitals, we have utilized the gravitational placentography devised by Frank Reid, an Englishman. The roentgen interpretation is based on displacement of the presenting part outside of certain measurable limits in relation to specific pelvic structures, despite the force of gravitation that is pulling the fetus toward those landmarks. We use the gravitational method in close collaboration with the obstetricians, and have ascertained that this approach is very satisfactory when one does not wish to inject contrast material.

Thermography. Thermography is the use of radiography to plot body-surface temperatures, and thermograms are photographic reproductions of the infrared rays that spontaneously emanate from the body. Placental localization can be accomplished with thermographic apparatus, and radiation exposure is thereby obviated.

Summary. In summary, multiple radiographic technics are available as aids in placental localization. All have their advantages and disadvantages, and none are ideal. Recent reports on newer radioactive isotopes and thermography indicate that improvements in radiologic methods are being sought and that they hold promise of accurate localization of the placenta with a minimum of discomfort and hazard to mother and fetus.

Isotope Placental Localization

ROBERT M. KRETZSCHMAR, M.D.
Iowa City

ISOTOPE TECHNICS of placental localization were first developed in England when Browne used sodium^{24} as the tracer substance.[1] It was not until 1957 that Weinberg first used radio-iodinated serum albumin (R.I.S.A.) as the radioactive source.[2] More recently, chromium-tagged red blood cells and chromium-tagged serum albumin have been used.[3] Fifteen years of progress have brought about refinements of instrumentation and isotopes, with reduction of radiation exposure and increased accuracy of localization. Isotope placental localization is simply another indirect technic for the localization of the placenta. It is necessary to use an indirect technic since a direct examination of the cervix carries with it hazards of hemorrhage.

The principle behind the isotope technics is quite easily understood. The selected radioactive compound is one that remains in the blood stream, and therefore, wherever a collecting or pooling of blood takes place, increased emission of radioactivity can be detected. The placenta is certainly a collection of blood, as are the liver, spleen and heart. Areas of increased radiation represent pools of blood and can be differentiated from the surrounding less-vascular tissue or fluid. Since the placenta has the largest volume of blood in the uterine area, it can be located by means of a suitable scanning device. The heart is used as a reference pool of blood, and we usually express our measurements in terms of per cent of radioactivity of the heart.

Any radiation exposure of the mother and fetus must be scrutinized carefully. In using small dosages of radioactivity, e.g., 10 microcuries R.I.S.A., it has been calculated that the total radiation exposure to the fetus is approximately 4 millirads or less.[4] This represents approximately 5 per cent of the radiation that might be administered during the taking of a single x-ray film of the maternal abdomen. The low dose of radiation is made possible through the use of extremely sensitive external counting devices. With the use of the newer chromium-tagged products, the theoretical hazard to the fetal and maternal thyroids can be eliminated.

In a small study incorporating 21 patients with third-trimester bleeding, both isotope localization and x-ray localization technics were used for comparison. With these patients, I tried to predict the placental location when third-trimester bleeding occurred. At the time of delivery, the uterus was inspected to determine the placental site. Of the study group, two patients had total placenta previa, and one had a low-lying placenta which did not bleed during labor and vaginal delivery. The isotope localization method showed that these three patients had placentae located in the lower pole of the uterus. Three other isotope studies were equivocal prior to the thirtieth week of gestation. These were repeated between 31 and 33 weeks, and placenta previa was ruled out. This represented an initial false-positive count of three, which was later converted to an accurate negative count after the thirty-first week, but before the thirty-third week.

The x-ray studies indicated four "probable placenta previa." Three of these were as listed above—two placenta previa and one low-lying placenta. One false-positive was occasioned by a pelvic tumor which displaced the fetal head out of the pelvis. Three other x-ray reports indicated that "placenta previa could not be ruled out." Those patients remained in the hospital for expectant care, and probably should be classified as false-positives. Hospitalization of false-positive patients represents a considerable expense, and the

isotope technics could have reduced the number of false-positives in this study.

This small study does not establish that one system is more accurate than the others, but it suggests that the number of false-positive results might be reduced by using the isotope method. This could represent a savings in the expectant care of undiagnosed third-trimester bleeding patients.

The isotope technic of placental localization is safe, and is as accurate as any presently-used indirect method. It does require additional equipment and special training, however. The system will improve and become even more refined in the future.

REFERENCES

1. Browne, J. C. M. and Veall, N.: Method of locating placenta in intact human uterus by means of radio-active sodium. J. Obstet. & Gynec. Brit. Emp., **57**:566-568, (Aug.) 1950.

2. Weinberg, A. and Rizzi, J.: Localization of the placental site by radio-active isotopes. Obst. & Gynec., **9**:692-695, (June) 1957.

3. Cavanagh, D., Gilson, A. J. and Powe, C. E.: Isotopic placentography: evaluation based upon study of 50 patients. Southern Med. J., **54**:1340-1346, (Dec.) 1961.

4. Swartz, D. P., Platt, M. A. and Heagy, F. C.: Radioisotope (I-131) studies of placental localization and circulation. Amer. J. Obstet. & Gynec., **85**:338-344, (Feb.) 1963.

Posterior Placenta

LEO J. DUNN, M.D.
Iowa City

THE POSTERIOR-PLACENTA concept was brought to us from England by Stallworthy. The English have contributed much to our knowledge of placenta previa, and have paid much more attention to the finer points of this disorder than we have. In his paper, Stallworthy called our attention to the accentuated risk when the placenta is in the posterior position. He used the terms Type 1 and Type 2 placenta previas, which correspond, in our terminology, to low-lying placenta and marginal previa, respectively. According to his findings, the posterior placenta prevents engagement of the presenting part, allows continued bleeding, and therefore necessitates cesarean section.

Figure 1 is a drawing based upon one of Stallworthy's illustrations. It shows that the size of the pelvis has special importance when the placenta is

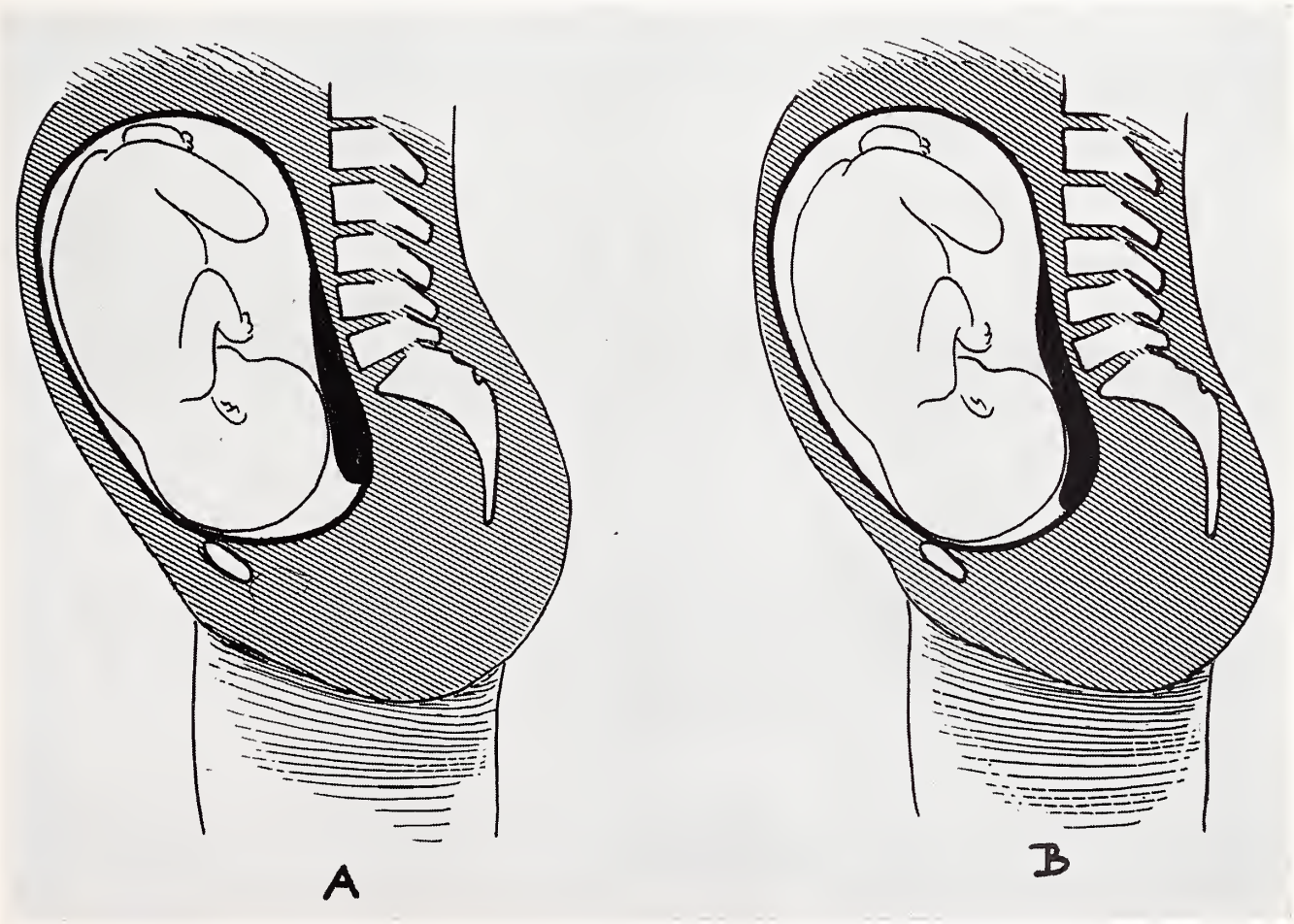


Figure 1. From Stallworthy, J.: Dangerous Placenta. AM. J. OBST. & GYNEC., 61:720-737, (Apr.) 1951, figure 15.

in the posterior position. In case A, vaginal delivery is impossible because a functional cephalopelvic disproportion prevents engagement. In B, vaginal delivery is possible because the pelvis is large enough so that the placenta plus the fetal measurements do not constitute disproportion.

In our literature we have tended to disregard the site of the placenta, and thus we lack adequate information on the respective hazards of anterior and posterior locations. In a review of placenta previa at this hospital, Dr. London and I found that posterior placenta previa occurred in 40 per cent of our cases, yet there was no difference in outcome when compared with cases having the anterior location. This apparent disproof of Stallworthy's "dangerous placenta" theory has led to the following speculations.

Williams has shown by means of frozen cross-sections of the pelvis that at term the lower uterine segment begins at the inlet (Figure 2). This finding was confirmed by Marshall, in 1939, in a series of cesarean sections. Therefore, any placenta extending into the lower uterine segment must extend below the inlet.

The second consideration is that of available space. Caldwell and Malloy classified pelves into pure types—the android, the anthropoid, the gynecoid and the flat—and also indicated that there are mixed types, for example a combination of gynecoid posterior pelvis and android fore-pelvis. Figure 3 illustrates the pure types with a fetal head in the inlet.

As shown in that illustration, the fetal head cannot completely fill either the anthropoid fore-pelvis or the android fore-pelvis. Thus a part of the A-P diameter of the inlet is not available to the engaging head. One can see that the head can use the posterior space in all types of pelves, but that in these two types it cannot rest against the symphysis.

The illustration also shows what would occur if the placenta were to be located anteriorly or posteriorly in these different types of pelves. In the anthropoid and android pelves, the unused space in the fore-pelvis can accommodate the placenta. However, if the placenta is located posteriorly, it will usurp a valuable part of the already diminished usable space of the inlet. The flat pelvis and the gynecoid pelvis have available room at the sides, but either an anterior or a posterior placenta would encroach on the antero-posterior diameter of the inlet in both these types.

One other consideration is that of pelvic size. Certainly the pelvis varies not only in configuration but also in size. This recalls Stallworthy's illustration of the posterior placenta, where vaginal delivery was not possible in the small pelvis, but was possible in the larger pelvis.

Two additional factors to be considered would be fetal size and placental thickness. Prematurity is quite common with placenta previa, and the thickness of the placenta is apparently quite variable.

Thus, in conclusion, one can say that Stallworthy's initial concept is probably correct as regards the incidence of problems consequent to posterior location of a placenta previa. However it is not limited to that location and is influenced by other factors. The question is more clearly one of disproportion, and this is the result of the placenta's encroachment upon the available space. The available space is determined by pelvic measurements and the shape of the inlet. The result is a functional type of disproportion.

The concept just stated is somewhat fortified by comments in the literature by those who have reported large series of placenta previas, in which the persistently floating head had occasioned the author's worst experiences with placenta previa. At the conclusion of his article, Stallworthy made the statement: "We believe that in placenta previa it is of much greater importance to know where the presenting part is in relation to the pelvic

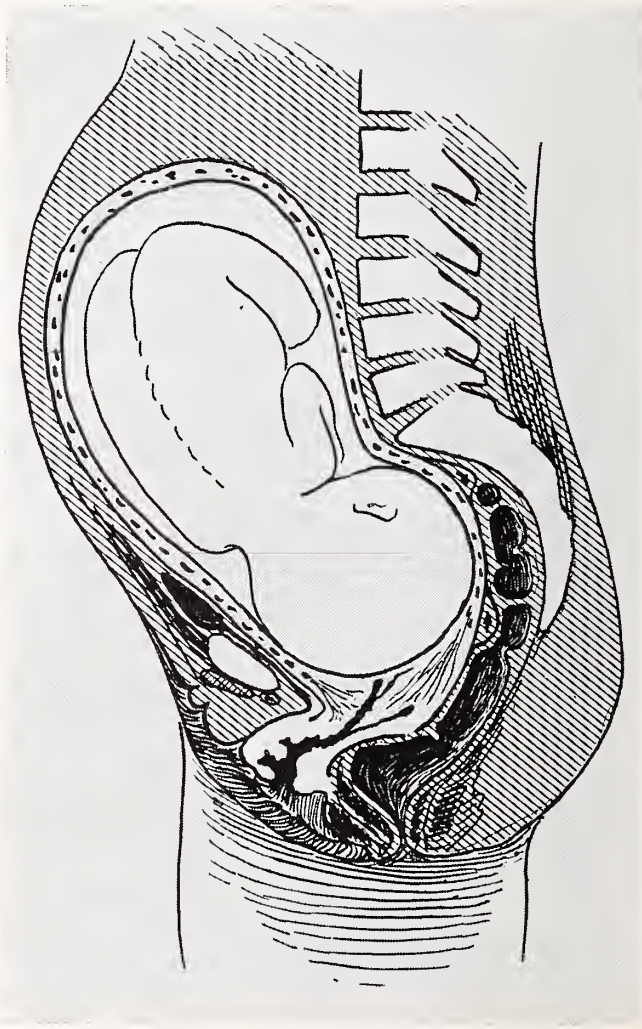


Figure 2. At term, the lower uterine segment begins at the inlet. From Williams, J. Whitridge: OBSTETRICS, Fourth Edition, figure 240, page 268.

brim, than where the placenta is in relation to the os."

What Can Be Done to Reduce Perinatal Mortality?

ROBERT E. L. NESBITT, JR., M.D.
Syracuse, New York

IDEALLY, THE BEST method of reducing perinatal mortality in association with placenta previa would be to prevent this complication. Unfortunately, this approach is not as promising as it might be, since the precise etiology of placenta previa is unknown. There is some evidence indicating that placenta previa is related to some problem of impaired intra-uterine environment, and that this complication may be just one of a variety of unfortunate events which may result as a consequence of faulty implantation, defective vascularization, and/or poor development of the decidua. According to this hypothesis, the placenta spreads over a larger area of attachment in search of the requisite supply of nutriment, and its margin ultimately reaches to the vicinity of the internal cervical os (either the main body of the placenta or persistent tissue present in the membranes as a succenturiate lobe or placenta membranacea).

Abnormal placentations may be ones of a gamut of possible sequelae arising from poor

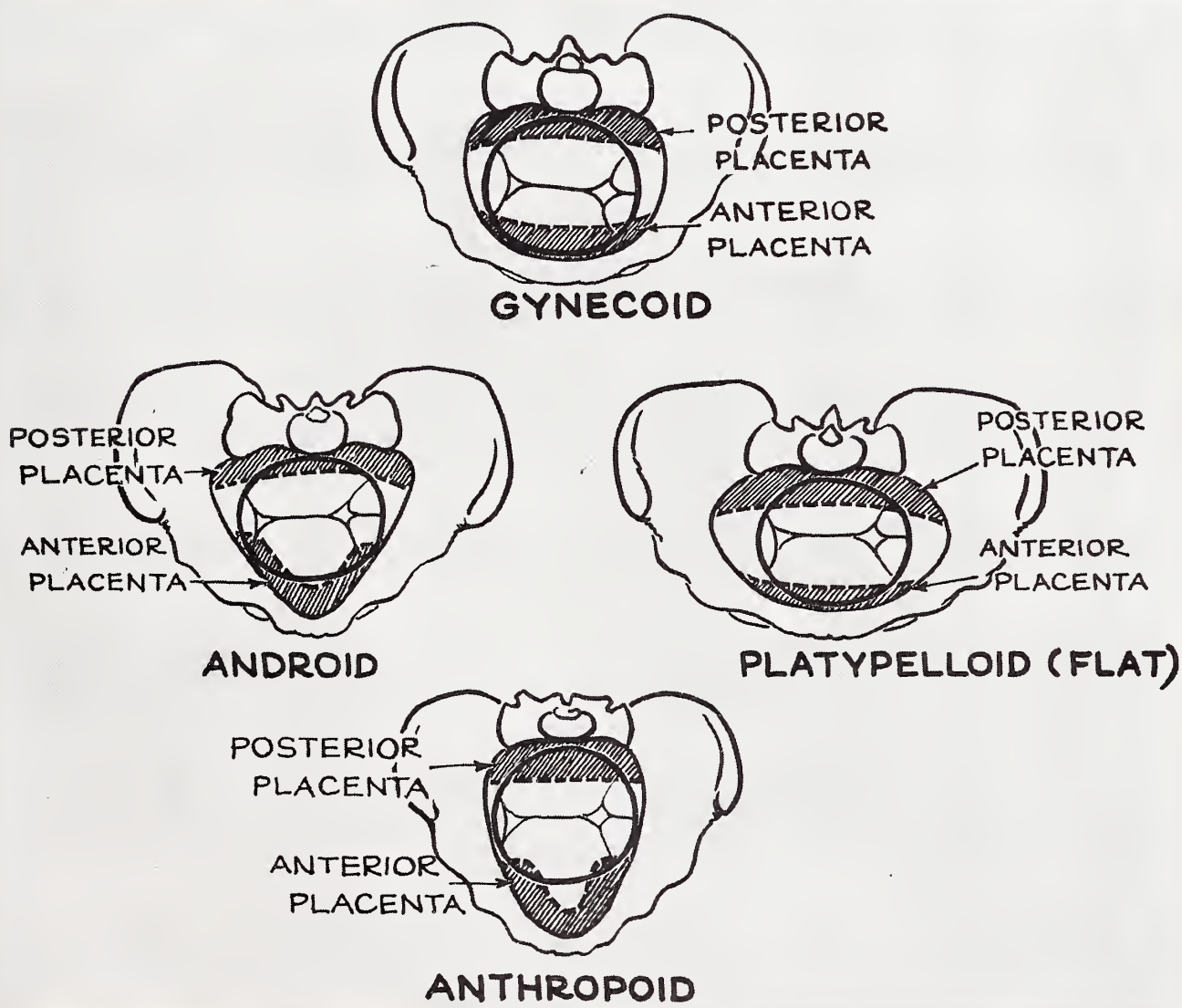


Figure 3. Pelvic configurations, From Steer, Charles M.: MOLOY'S EVALUATION OF THE PELVIS IN OBSTETRICS, Second Edition, 1959, figure 57, page 110.

preparation of the endometrium, and only a broadly based preconceptional evaluation can determine the cause. In some instances, there is an organic basis such as a uterine anomaly or submucous myoma, but in most cases the causative factor is not obvious. Occasionally, it is possible to incriminate a subclinical defect—endocrine, metabolic, nutritional or emotional—but its specific association with placenta previa is largely hypothetical at this time. For obvious reasons, however, since a poor progestational support of the pregnancy from any cause represents a hazard for the conceptus, these defects should be corrected prior to gestation. The fact that developmental anomalies of the fetus seem to be more common in cases of placenta previa probably incriminates an impaired intra-uterine environment and faulty placentation as factors in some cases. When no cause is found, as is often the case, the patient undertakes her next pregnancy optimistically.

Patients with placenta previa are generally older than the clinic average. When attention is confined to fixed age and parity groups, the incidence of placenta previa is seen to increase consistently with age as well as with its related factor, the parity of the patient. In addition, advanced maternal age is associated with a number of problems that are inimical to fetal welfare, and these may influence not only the management of the cases but also the perinatal outcomes in placenta previa. Obviously, these individual risks are important considerations in family planning among older women whose reproductive status may be adversely affected by general health status or local pathology of the genital tract. Moreover, factors responsible for mitigating perinatal losses among vulnerable groups include, as much as anything else, a high standard of general medical care, appropriate work-up, remedial therapy, sensible time of pregnancy with respect to health status, intensive obstetric supervision and care, and good pediatric support.

Any woman who bleeds from suspected placenta previa presents a serious problem, but one should manage her with certain principles in mind. The fundamentals include the control of bleeding due to the partially separated placenta, adequate blood replacement, termination of pregnancy at the optimal time for maximal maternal and perinatal salvage, and selection of a definitive mode of delivery that minimizes maternal injury. Undue conservatism may subject the mother and fetus to great risks, and on the other hand, too energetic or ill-timed vaginal examination may clarify the diagnosis at the expense of hemorrhage and delivery of an immature infant.

Approximately one-half or more of the cases of placenta previa present with an initial episode of bleeding prior to the thirty-seventh gestational week, and are dependent in large measure upon continued intra-uterine gestation for satisfactory perinatal salvage. The factor of prematurity contributes greatly to the relatively high mortality rate, which still exceeds 15 per cent in most clinics despite some decline in recent years. Although perinatal mortality in association with placenta previa is roughly 15 times that noted in uncomplicated delivery, this risk is less than 5 times as great when appropriate adjustment for birth weight is made (Table 1). Thus, the overriding issue is one of infant immaturity associated with premature delivery, especially among live-born infants.

The principal cause of fetal death is anoxic anoxia occurring in utero, secondary to maternal blood loss. Although small amounts of fetal blood may be lost in certain cases of placenta previa, it is usually not enough to cause anemia or anemic anoxia of the infant. Thus, support of the mother with prompt, adequate blood replacement and delivery at the optimal time to avoid the inevitable damage to the fetus of continuing hemorrhage are fundamental considerations. If the fetus is premature at delivery, its chances are better in the nursery than they would have been in the hostile uterine environment, even though immaturity and hypoxia predispose to the development of hyaline-like membrane disease and to intracranial hemorrhage among live-born infants.

The advantages that accrue from a program of expectant management in highly selected cases of placenta previa have been amply documented in recent perinatal mortality studies, but improvement has not been as dramatic as one might have hoped. Unfortunately, only about one-quarter of placenta previa cases are candidates for expectant management because labor and/or bleeding make it necessary to examine and deliver the majority relatively soon after admission to the hospital. Moreover, if the fetus is of term size at the time of the initial bleeding episode, it is unwise to defer the definitive pelvic examination. Likewise, when

TABLE I

RATIO OF PLACENTA-PREVIA MORTALITY TO MORTALITY IN UNCOMPLICATED DELIVERIES (SINGLE BIRTHS IN UPSTATE NEW YORK, 1956-58)[3]

Birth Weight Gm.	Perinatal Mortality %	Fetal Death Rate %	Neonatal Mortality %
1000 or less	1.0	1.5	1.0
1001-1500	1.3	1.4	1.3
1501-2000	1.9	2.0	1.9
2001-2500	3.6	4.1	3.5
>2500	9.9	18.7	5.5
Total	14.6	18.9	13.7
adjusted*	4.7	8.1	3.2

* Ratio of total rates with rate for placenta previa adjusted to birth-weight distribution in uncomplicated deliveries.

a program of expectant management has been carried out successfully over a period of weeks, digital examination should be performed under double-setup precautions at the onset of labor or when the fetus reaches maturity, even though the patient may have been asymptomatic for a considerable period.

Only under the most ideal circumstances is one justified in delaying the termination of pregnancy in the interests of the fetus. The requisites of the expectant program include meticulous follow-up care of the patient, proper evaluation of blood loss, serial hematologic determinations, and full patient cooperation. Adequate facilities for rapid treatment and blood replacement should be available at all times, and such safeguards are at hand only in the hospital. If the diagnosis of placenta previa cannot be excluded by the several technics already outlined by the prior discussants, the patient should remain hospitalized under close supervision until definitive diagnosis and delivery have been achieved.

A review of the Upstate New York perinatal mortality statistics, in cases of placenta previa during the period from 1942 to 1958[3] shows that a drop occurred between 1949 and 1951, but that there has been no improvement since 1951. A lowering of the neonatal mortality has been counterbalanced by a rise in fetal death rate in recent years (Table 2).

Since the expectant treatment of placenta previa was employed widely by 1948-49, it is reasonable to assume that an improved birth-weight distribution among the infants, as well as the conservative technics of management which had become popular by that time, were responsible in large measure for the improved perinatal salvage. During this period, both the neonatal mortality and the fetal death rates were reduced more sharply than the corresponding rates for all births, the relative reduction being greatest in fetal mortality.

Judging from recent data, it is apparent that the fine adjustment between conservative and definitive-operative management, which assures optimal fetal and neonatal salvage, is not achieved to an equal degree in all regions of Upstate New York. Perinatal mortality was significantly lower in hospitals where 50 or more patients with placenta previa were delivered during 1955-57 than in hospitals where relatively few such patients were delivered (Table 3). The ratio of observed to expected deaths followed the same trend for both stillborn and live-born infants. Moreover, a hospital cesarean section rate of less than 40 per cent was accompanied by a decreased perinatal "salvage" rate because of the associated high fetal mortality. The most favorable perinatal salvage rates were found in hospitals with section rates of 70 per cent or greater because of associated low fetal-mortality rates and accompanying near-optimal neonatal survival rates (Table 4).

Generally, the cesarean section rate for the area does not seem to have been optimal, since in recent years the fetal-death component has increased relatively more than the neonatal deaths have declined. An alternative explanation is that as a whole the clinicians in the Upstate New York area are now overly zealous in their use of ex-

TABLE 2

MORTALITY FOR ALL BIRTHS AND FOR PLACENTA-PREVIA BIRTHS (SINGLE WHITE BIRTHS), UPSTATE NEW YORK, 1942-58[3]

Yr.	Mortality: All Births %	Mortality: Placenta-Previa Births %	Change from Prior Time Period: All Births %	Change from Prior Time Period: Placenta-Previa Births %
Perinatal death rate/1000 live births & fetal deaths:				
1942, 1945	44.3	337	—	—
1948-49	37.1	296	−16.2	−12.2
1951-53	32.2	218	−13.2	−26.4
1956-58	30.1	222	− 6.6	+ 1.8
Fetal death rate/1000 live births & fetal deaths:				
1942, 1945	22.3	158	—	—
1948-49	17.9	137	−19.7	−13.3
1951-53	15.9	87	−11.2	−36.5
1956-58	14.5	99	− 8.8	+13.8
Neonatal death rate/1000 live births:				
1942, 1945	22.5	211	—	—
1948-49	19.5	185	−13.3	−12.3
1951-53	16.6	143	−14.9	−22.7
1956-58	15.8	137	− 4.8	− 4.2

TABLE 3

RATIO OF OBSERVED TO EXPECTED MORTALITY ASSOCIATED WITH PLACENTA PREVIA IN HOSPITALS BY NUMBER OF PLACENTA-PREVIA CASES (UPSTATE NEW YORK, 1955-57)[3]

Placenta-Previa Deliveries	No. of Hospitals	Total No. of Placenta-Previa Deliveries	Ratio of Observed to Expected Deaths*: Perinatal Deaths	Neonatal Deaths	Fetal Deaths
<10	103	433	1.10	1.08	1.20
10-14	34	401	1.07	0.96	1.16
15-19	26	435	1.02	1.04	0.97
20-29	27	671	1.00	1.07	0.81
30-39	13	448	1.00	1.00	1.14
40-49	7	318	0.97	0.91	1.08
50 or more	11	666	0.89	0.91	0.84
Totals	221	3,372	1.00	1.00	1.00

* Expected number of deaths based on birth-weight rates for all hospitals combined.

pectant management. The fetal mortality curve may be biphasic, the rate being high if this mode of management is employed either too infrequently or too often. Moreover, undue fetal risks may be a consequence of ill-advised conservatism or of undue procrastination in the face of persistent bleeding, regardless of the mode of delivery. Poor fetal results may be expected from cesarean sections that are performed too late to avoid the hazards of intra-uterine anoxia. These errors in clinical judgment, often compounded by ill-advised vaginal procedures and traumatic manipulations, may subject both mother and fetus to substantial risks. If a vaginal procedure is selected, it must be simple and atraumatic. Also, if blood is not immediately available and if the losses are not replaced promptly and adequately, the end results may be disastrous, regardless of the mode of delivery.

It can be seen from the flow chart (Figure 1)[1] that the selection of a method of definitive treatment in cases of placenta previa is based primarily upon the status of the cervix, the parity, the degree of previa, the presence or absence of labor, and the amount and duration of bleeding. All cases of total placenta previa should be delivered by cesarean section, and most primigravidas who have even minor degrees of partial previa are better delivered by the abdominal route. Obstetricians have somewhat more latitude in selecting a method of definitive management for multiparas who have partial placenta previa, but they should section the patients in this category who are actively bleeding but who are not in labor and in whom the cervix is relatively closed. Multiparas with marginal previa—especially those with an open cervix or those who are already in labor—are best handled by rupture of the membranes in anticipation of vaginal delivery, provided it can be achieved simply and atraumatically. Only rarely, when labor does not proceed normally, will uterine stimulation be required or abdominal intervention necessitated. In the presence of active infection, the outlook is grave, and every effort should be made to deliver by vaginal methods. The concept of the "dangerous placenta" advanced by Stallworthy in 1951 has been discussed by a previous speaker. It incriminates the posteriorly implanted placenta, and may likewise influence management when there is a relative disproportion. By the same token, the presence of a fetal malpresentation—often a transverse lie—will prompt abdominal intervention irrespective of other factors relating to the placenta previa.

TABLE 4

RATIOS OF OBSERVED TO EXPECTED MORTALITY ASSOCIATED WITH PLACENTA PREVIA, 1955-57 IN HOSPITALS WITH 20 OR MORE PLACENTA-PREVIA DELIVERIES[3]

Percentage of Patients with Placenta-Previa Delivered by Cesarean Section	No. of Hospitals	Total No. of Cases	Ratio of Observed to Expected Deaths* Peri-natal Deaths	Neo-natal Deaths	Fetal Deaths
<40	10	367	1.03	0.97	1.13
40-49	11	430	0.99	0.98	0.99
50-59	19	696	1.00	0.99	1.05
60-69	9	332	0.99	1.08	0.86
70 or more ..	9	278	0.97	1.03	0.79
Totals	58	2,103	1.00	1.00	1.00

* Expected numbers based on rates by birth weight in 58 hospitals combined.

The outmoded technics of inducing labor or of compressing the placental edge, which employ manual dilatation of the cervix, the introduction of Voorhees bags or bougies, or Braxton-Hicks version, have no real place in modern obstetrical care. Scalp traction is occasionally used in conjunction with rupture of the membranes as a means of controlling blood loss in labor. Also, when the fetus is small and presents as a footling breech, satisfactory pressure upon the bleeding uterine sinuses can occasionally be achieved by exerting traction on the leg.

Through the principles of management outlined here, approximately two-thirds of our cases of placenta previa are delivered by cesarean section (69 per cent of cases over the past three years).[2] I prefer to use the classic operation on most cases, although this question is somewhat controversial. The major point to be emphasized, however, is that the treatment for each patient should be determined by the individual circumstances of the case, and one must take into account the following factors: age; parity; general condition of the patient; past obstetrical history; duration of pregnancy; relative size of the fetus; viability and normalcy of the fetus; fetal presentation and position; pelvic morphology and dimensions; soft-tissue pelvic masses; degree of placenta previa; amount of blood loss; presence or absence of labor; degree of cervical dilatation and effacement, if any; station of presenting part; presence or absence of uterine infection; and status of the membranes. It should be further emphasized that here, as in any other hypoxia-producing maternal complication, avoidance of multiple insults to the fetus is mandatory. This means that the deleterious effects of oxygen-want, narcosis and trauma must not be compounded by ill-advised or ill-timed practices during labor and delivery. Whenever possible, shock is prevented, systemic analgesics and anesthetics are held to the minimum, oxygen is administered to the mother and difficult vaginal procedures are avoided at all cost.

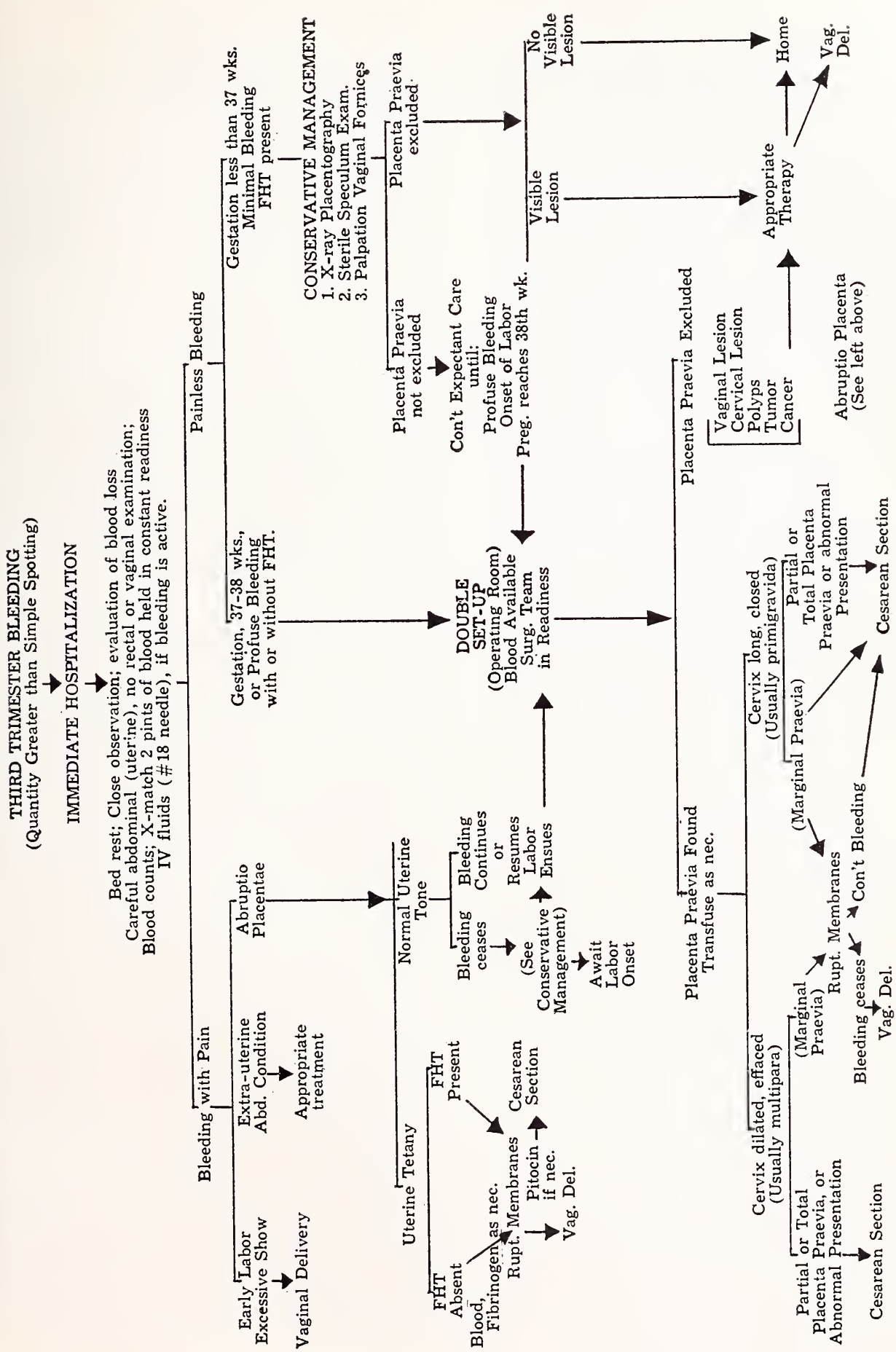


Figure 1. From: Hays, R. C. and Nesbitt, R. E. L., Jr. (Reference No. 1).

In attempting to reduce perinatal wastage, we must be greatly concerned about the immediate postnatal period in these high-risk infants. These newborns may face a dire emergency, and expert resuscitation as well as appropriate environmental control measures are imperative. A clear airway, adequate oxygenation, and intensive supervision are requisite immediately. Any depressed infant, premature infant, or infant delivered by cesarean section should be observed for at least 24 hours in a special-care unit or premature nursery where he can be treated for respiratory difficulty, apnea, electrolyte imbalance and the like, should the need arise. In advance of the delivery, the pediatrician should be fully informed of the maternal condition and circumstances pertaining to fetal welfare, and he should be on hand at the time of birth to program care for the infant during the early neonatal period.

It should be borne in mind that perinatal mortality as an index of pregnancy outcome is a crude parameter which does not take into account a toll which may be even more distressing—namely, that of permanent neurologic disability. The mortality rate is higher among premature infants during the first two years of life, and even after that time there is a higher incidence of disorders considered to be associated with birth injury, regardless of the cause of hypoxic damage. Any program which minimizes deaths likewise reduces permanent morbidity, and I hope that the principles I have outlined here today will help you to achieve greater perinatal salvage, in terms of both immediate and remote casualties.

REFERENCES

1. Hays, R. C. and Nesbitt, R. E. L., Jr.: A guide to the management of placenta previa. Clin. Med., **8**:1129-1136, (June) 1961.

2. Nesbitt, R. E. L., Jr.: Bleeding and hemorrhage in late pregnancy, placenta previa and low-lying placenta. Clin. Obstet. & Gynec., **3**:569-584, (Sept.) 1960.

3. Nesbitt, R. E. L., Jr., Yankauer, A., Schlesinger, E. R. and Allaway, N. C.: Investigation of perinatal mortality rates associated with placenta previa in Upstate New York, 1942-1958. New Eng. J. Med., **267**:381-386, (Aug. 23) 1962.

4. Stallworthy, J.: Dangerous placenta (Joseph Price Oration). Amer. J. Obstet. & Gynec., **61**:720-737, (April) 1951.

Attend the

AMA CLINICAL MEETING

Philadelphia, Nov. 28-Dec. 1

Advances in the Management of Blood Diseases

Three encouraging reports were made at the annual meeting of the American Association of Blood Banks, at Bal Harbour, Florida, during September. Dr. Judith Graham Pool, of Stanford University, described a new freeze-thaw method of concentrating antihemophilic globulin to yield a vital clotting factor with 30 times the potency of the currently-used fresh-frozen plasma, and to permit reconstitution of the remainder of the blood for use in conditions other than hemophilia. The process, involving centrifuging, freezing and the use of dual plastic bags, is in use in blood banks in San Francisco, San Jose and Burlingame, California.

Dr. William O. Reid, of the Huron Road Hospital, East Cleveland, reported that in 36 hemophiliacs ranging in age from 11 months to 50 years, Epsilon-amino-caproic acid (EACA) taken by mouth eliminated the need for further transfusions of plasma, whole blood or antihemophilic globulin concentrates "in almost all cases." The group had 40 teeth extracted without trouble. To be effective, he said, the drug dosage must be individualized and given every six hours.

The successful use of volunteer Sing Sing convicts to test the effectiveness of anti-Rh gamma globulin injections in preventing Rh hemolytic disease was reported by Dr. John G. Gorman, of the Presbyterian Hospital Blood Bank, New York, and others. In effect, the new procedure "vaccinates" the Rh-negative woman so that she will not produce the antagonistic antibodies which may destroy the blood cells of subsequent children. Clinical trials on postpartum mothers began at Columbia-Presbyterian in April, 1964, with the assignment of alternate Rh-negative mothers to study and control groups. Since then, none of 34 women receiving the gamma globulin has developed antibodies, but six of the 34 in the control group have done so.

"Ultimate proof of complete efficacy of this preparation can be obtained only when the effect of a subsequent Rh-positive pregnancy is known," Dr. Gorman said. "In any event, we feel that this is a rational and very promising approach to this serious problem. In the months ahead, we are certain to witness a marked shift in emphasis from the management of affected babies to prevention in the mothers. The method will not benefit a mother who already has an affected child."

Some of the women in the study group are pregnant, but none has given birth to a child since receiving the preparation. Dr. Gorman emphasized that general distribution of the material will require approval from NIH and production of enough of the blood fraction to protect some 300,000 women per year. Similar studies are being made in Liverpool, England, and in Long Beach, California.

Trauma to the Thoracic Aorta

MONTAGUE S. LAWRENCE, M.D., and
JOHANN L. EHRENHAFT, M.D.
Iowa City

RUPTURE OF THE THORACIC AORTA following trauma is a real challenge in diagnosis and management in the field of thoracic surgery. In 1958 Parmley, of the Armed Forces Institute of Pathology, studied 1,174 necropsy files of patients with traumatic injuries to the heart and aorta. Of special interest were the records of 278 patients with non-penetrating traumatic rupture of the aorta, with a survival rate of 14 per cent.[1] Only three patients in the group of 39 had successful surgical resections.

Between 1954 and 1964, we had the opportunity to observe 12 patients with traumatic injuries of the thoracic aorta at the State University of Iowa Hospitals (Table 1). Ten patients had been involved in automobile accidents, one had fallen from the roof of a barn, and one patient had suffered a gunshot wound of the heart and aorta. Three patients died immediately after their accidents. One died 19 days after his accident, just prior to having a second thoracotomy for resection of a ruptured aorta under total-body hypothermia. One patient had rupture of his traumatic aneurysm seven years after his accident, and died shortly after admission to the hospital. Four patients have had successful resections of their aortic aneurysms. Two of this group had had recent injuries, and in two of them the resections had been carried out four and 22 years later, respectively.

Two other patients underwent exploration only, without resection of their lesions, since they were regarded as having healed "calcified aneurysms." One patient with minimal calcification and progressive enlargement of his aneurysm was seen two years following the initial trauma, but he was lost to followup after he refused surgical intervention. The one patient who had sustained a penetrating wound of his left ventricle and aorta by a .22 caliber missile underwent repair of the aorta and heart, with good results.

Four illustrative case histories are presented:

Case 1. A 19-year-old female had been riding in the back seat of an automobile traveling approximately 90 miles per hour, with a patrol car in pursuit. She had been thrown from the automobile when the driver ran into a culvert, and the car had overturned several times. She arrived in the Emergency Room two hours after the accident. She was in severe shock, and had paradoxical respirations and a left hemothorax. A chest tube was placed in the left side of the thorax, and approximately 2,000 cc. of blood escaped immediately. Another chest tube was placed in the right side of the thorax, but only air and a minimal amount of blood escaped. Attempts to replace the blood loss and improve the patient's general status were unsuccessful, and she died approximately 45 minutes after admission. An autopsy revealed a complete rupture of the aorta just below the subclavian artery.

Case 2. A 17-year-old male patient was seen in the Emergency Room approximately one hour following a head-on collision that had resulted from a game of "chicken" played from opposite sides of a hill. He was semi-comatose, was in shock, and presented multiple facial lacerations, a fractured patella and findings suggestive of thoraco-abdominal trauma. The diagnosis of a ruptured left diaphragm, lacerated spleen and a hemothorax was made. There was no bruit over the posterior thorax, and there was no widening of the superior mediastinum on the chest roentgenograms (Figure 1). The diagnosis of a ruptured thoracic aorta was not considered at that time. On March 29, 1964, after his blood pressure had been stabilized, he was taken to the operating room and a ruptured

The authors are an associate professor and a professor, respectively, of thoracic surgery at the U. of I. College of Medicine. Dr. Lawrence made this presentation at the meeting of the Iowa Academy of Surgery, in Council Bluffs, on September 12, 1964.

TABLE I

TYPES OF ACCIDENTS IN 12 PATIENTS WITH TRAUMATIC INJURIES TO THE THORACIC AORTA

Automobile	10
Fall from roof of barn	1
Self-inflicted gun shot wound	1
Results	
Immediate death	3
Late death	2
Thoracotomy without resection	2
Successful repair of aortic rupture	4
Lost to followup	1

spleen, a 6-inch tear in the left diaphragm and contusion of the stomach and descending colon were found. A splenectomy and repair of the diaphragm were done. During the immediate postoperative period the patient was semi-comatose, with the blood pressure stabilizing at 150/84 mm. Hg. He was irrational and required sedation. His sensorium gradually improved, and on April 1, 1964, three days following admission, the chest tube was removed after chest roentgenograms had shown complete re-expansion of the lung without evidence of pleural fluid (Figure 2).

Approximately two hours following removal of the chest tube, the patient complained of severe pain in his left side, and at that time a loud systolic murmur could be heard in the paravertebral line medial to the scapula. A diagnosis of a ruptured dissecting traumatic aneurysm was then considered, and a percutaneous retrograde femoral aortogram confirmed it (Figure 3A). The patient's blood pressure was 170/80 in the right arm and 130/60 in the left lower leg.

At the time of emergency exploration we found a partially disrupted descending thoracic aorta distal to the left subclavian artery, with a false aneurysm. We resected it and replaced it with a woven Teflon graft. Left atrial-femoral artery bypass and a Sigma motor pump were employed. The patient's postoperative course was very good. He developed some cardiac enlargement without demonstrable specific anatomic or electrocardiographic changes (Figure 3B). Partial removal of a comminuted patella was carried out on May 15, 1964. His present physical condition is excellent.

Comments: The first patient demonstrates the poor general prognosis for cases of traumatic rupture of the aorta, especially when there is complete transection of the aorta. The second patient was quite intriguing, especially since, except for aortography, all diagnostic procedures were exhausted at the time of admission.

Case 3. A 43-year-old male patient suffered a crushing thoracic injury in an automobile accident during December, 1941. He was hospitalized for approximately 60 days because of chest pain, and discharged in a satisfactory condition. He entered military service in November, 1943, and while working as a cook, he frequently complained of left chest pain when lifting heavy objects. After contracting amebiasis he was transferred to the zone of the interior, and in 1946 a defect of his aortic arch was observed. An aortogram at a military hospital confirmed the diagnosis of aortic-arch aneurysm. He was discharged from military service with a diagnosis of traumatic aneurysm of the arch of the aorta, and was seen at frequent intervals at military installations, where repeated roentgenograms of the chest were taken. They all showed calcification in the aneurysmal mass.

He was admitted to the University Hospitals in 1956, when he complained of a burning pain in his left shoulder and a feeling of fullness in the left side of his chest. Comparison between roentgeno-

Figure 1. Chest roentgenogram, posterior-anterior projection showing left hemothorax.

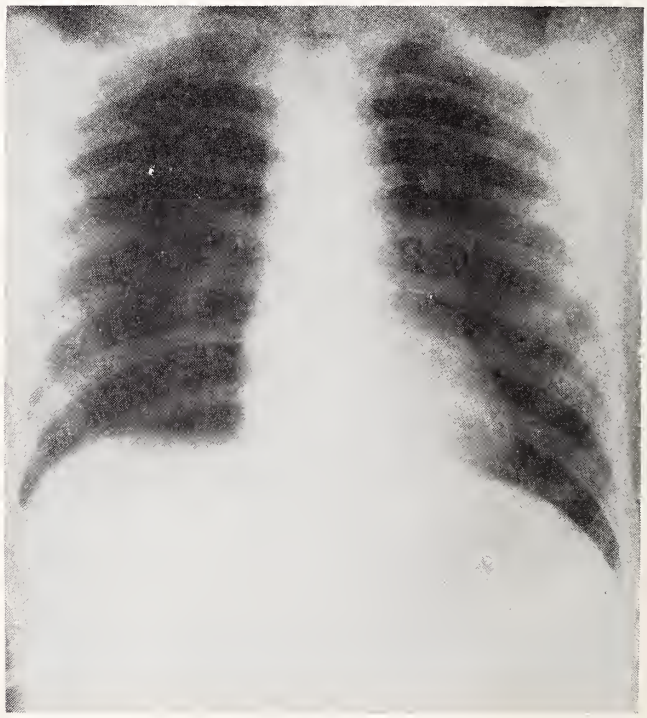


Figure 2. Roentgenogram of chest taken after removal of chest tube. There is no evidence of widening of the superior mediastinum.

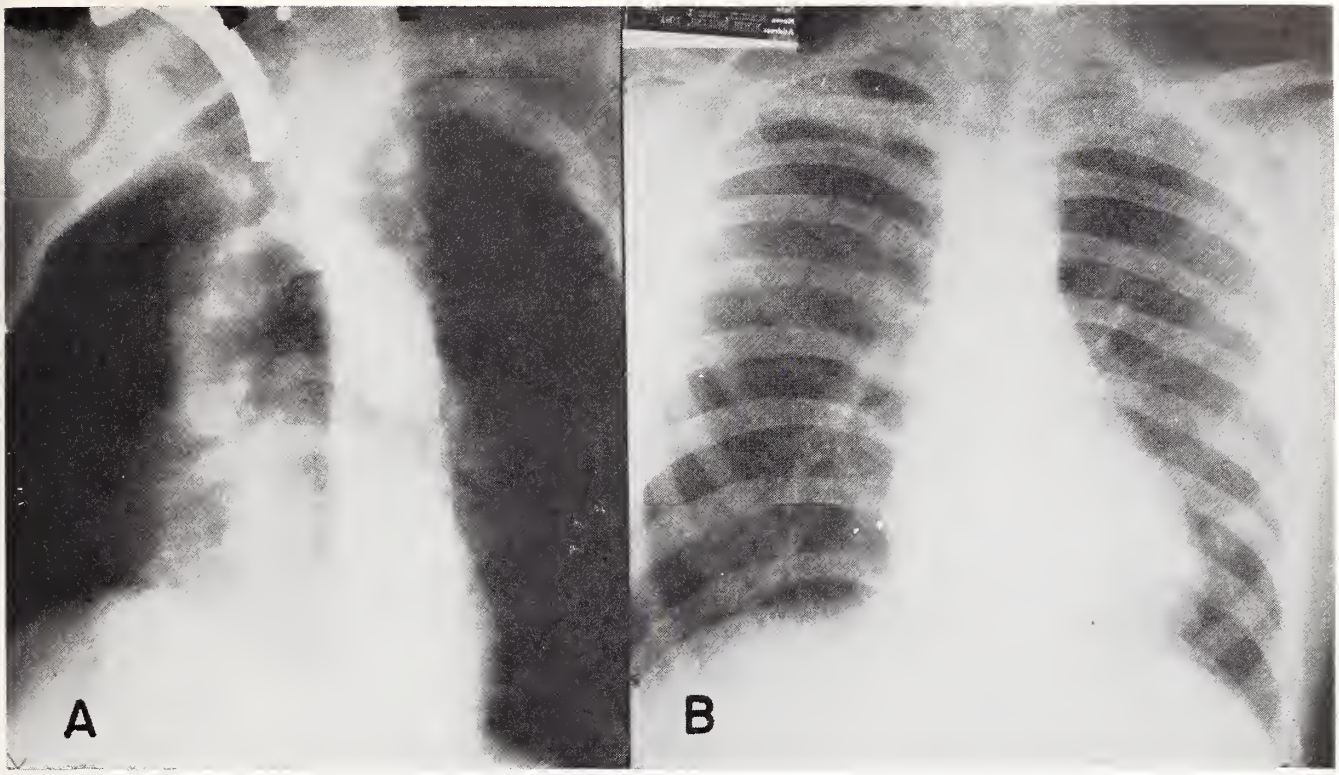


Figure 3. (A) Retrograde femoral aortogram showing extravasation of contrast material just distal to left subclavian artery. (B) Postoperative x-ray of chest showing slight enlargement of the heart.

grams taken at that time and the series which had been taken since 1949 showed no change in the character of the lesion. A repeat aortogram was contraindicated because of an iodine sensitivity.

In July, 1956, left thoracotomy was performed under total-body hypothermia, and a calcified, nonpulsating, healed fusiform thoracic aneurysm distal to the left subclavian artery was found (Figure 4). It was freely movable, and the operator felt that resection was not indicated. The patient was discharged from the hospital to return to work, and has been followed at intervals with chest roentgenograms since that time. He was last seen in October, 1963, and has remained asymptomatic and there has been no evidence of a change in the appearance of the aneurysm since 1956 (Figure 5).

Case 4. A 23-year-old male patient was admitted to the University Hospitals shortly after sustaining a self-inflicted gunshot wound of the left side of the thorax at close range. There was a wound of entry over the left side of the chest anteriorly. The missile could be palpated in the subcutaneous tissue in the right side of the thorax posteriorly. The blood pressure was 80/40 mm. Hg. He was very pale, and there was clinical evidence of a hemothorax. There was a flaccid paralysis of the right lower extremity.

A left thoracotomy revealed massive amounts of blood in the pleural cavity, with a perforating wound of the anterior and posterior walls of the left ventricle and a penetrating wound of the descending thoracic aorta. A large hematoma surrounding the aorta had produced a tamponade. The ventricular wounds were sutured directly, and with the use of an atraumatic clamp, the wounds of the aorta were debrided and closed primarily. The patient made an uneventful recovery, and when seen in the Out Patient Department two months following surgery, he had fully regained the use of his lower extremities.

DISCUSSION

The aortic tear in blunt trauma is usually a transverse one that may extend through the intima and media, with preservation of the adventitia, but may also extend through all layers, with retraction of the ends of the aorta (Figure 6). Patients in the latter group usually die immediately or within a few hours. If there is an aortic tear with preservation of the adventitia, which has been estimated to provide approximately 60 per cent of the tensile strength of the aorta[2] (Figure 7), the patient may survive for a period from a short time to several weeks, and then die of massive hemorrhage, or he may live for several months or years and develop a false aortic aneurysm initially surrounded by mediastinal tissues, with later scarring and calcification of the false aneurysm.

Figure 4. Photograph, taken at time of surgery, showing the aneurysm encased by a tough calcific mass.

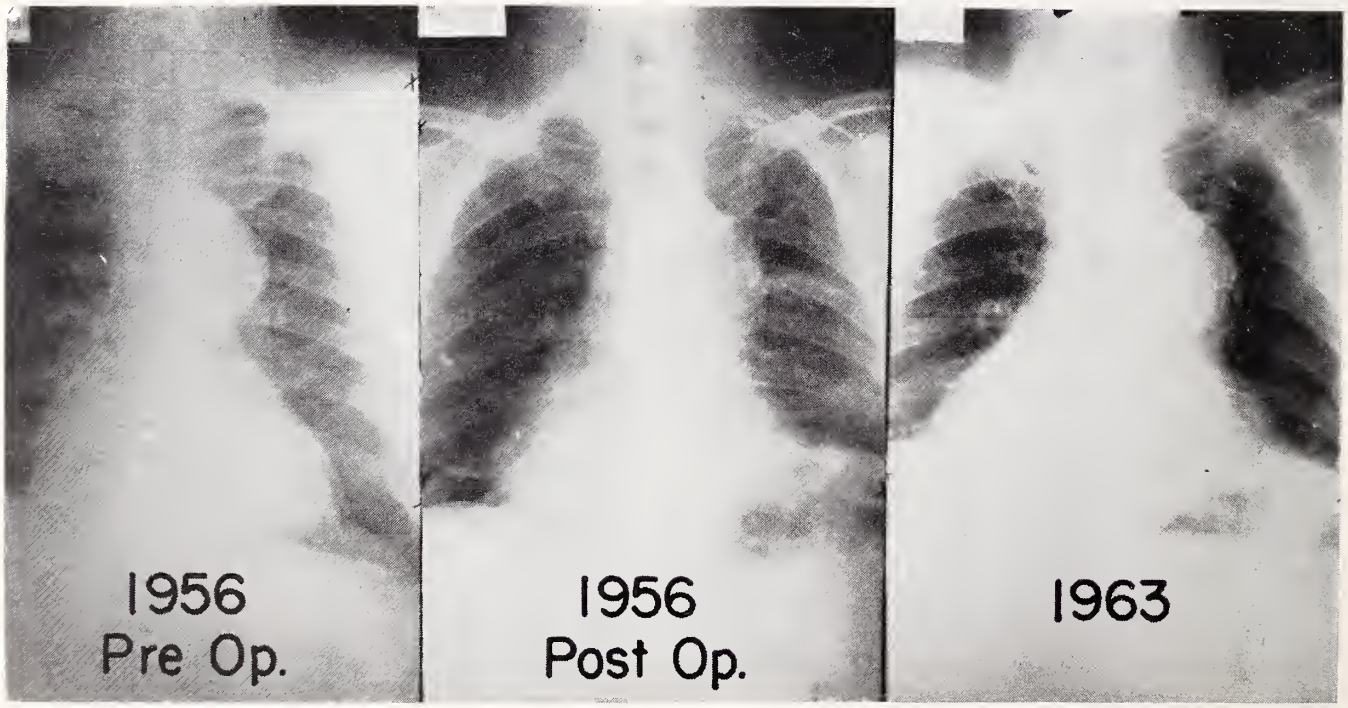


Figure 5. Chest roentgenogram taken pre- and postoperatively, in 1956 and in 1963, showing minimal change in size of the calcific aneurysmal mass.

Figure 6. Photograph of autopsy specimen showing transverse tear of aorta below the left subclavian artery, with retraction of the ends of the aorta.

Penetrating wounds of the thoracic aorta may occur anywhere, whereas non-penetrating wounds of the aorta always occur either in the ascending aorta, at the aortic innominate angle or, most commonly, at the proximal descending aorta just distal to the left subclavian artery.[3]

The mechanism of aortic rupture in non-penetrating trauma is direct or indirect. In direct ruptures there is a fracture displacement of one of the dorsal vertebrae which produces a rupture of the aorta by a shearing action. The most common mechanism of aortic rupture is an indirect shearing force produced by rapid deceleration at the site of junction of the relatively immobile thoracic aorta and the free suspended aortic arch proximal to this area (Figure 8). In crush injuries of the thorax, increased intravascular pressures may be responsible for aortic ruptures. Zehnder[4] has tested the tensile strength of strips of aorta and has calculated that pressures sufficient to produce rupture are equivalent to an intravascular pressure of 2,500 mm. Hg. It has also been suggested that there may be a weakness in the isthmus of the aorta as a result of the anatomical distribution of muscular fibers as the subclavian artery arises from the arch and as the arch receives the ligamentum arteriosum.[5]

There is always a history of severe trauma to the thorax, even though there may not be external evidence of trauma which would explain the profound shock. If there are other traumatic cardiac injuries, the patient usually does not survive long enough to permit salvage.[1] A bruit may be heard over the posterior mediastinum, and there may be physical findings of a hemothorax. Roentgenograms of the chest show a widened upper mediastinum, evidence of pleural fluid and other evidence of trauma to the thoracic cage. Provided there are no other organs injured, there may be clinical as well as laboratory evidence of a marked blood loss. Aortography by the retrograde femoral, the antegrade brachial or the left ventricular puncture route will confirm the diagnosis of traumatic rupture of the thoracic aorta.

Survival of patients with traumatic rupture of the thoracic aorta depends on the containment of the hematoma by the adventitia, mediastinal structures, adjacent organs and tissues. Recognition of and surgery for the early and acute lesions must be immediate, and repair has been successful in recent years through the use of a left atrial-femoral bypass with a Sigma motor pump, which usually can be assembled within 20-30 minutes. If a left atrial-femoral artery bypass is impossible, one can use hypothermia or even prosthetic aorta-to-aorta bypass around the lesion (Figure 9). Occasionally, with care, end-to-end anastomosis can be performed after clots and the irregular edges of the aorta have been removed. If these procedures are impossible, a woven prosthetic graft becomes necessary. Patients in whom the ruptured aorta was overlooked initially, and in whom the dissection did not progress and prove fatal, should have resections of their aneurysms and repair as an elective procedure. In some patients who have been followed for several years, the walls of traumatic aneurysms have been completely replaced by tough, calcific shells, and these lesions have not been resected. We have postulated that if such a lesion was resected and replaced with a prothesis, the replaced segment couldn't become as strong as "the completely healed aneurysm," and there is accumulating evidence that conservative management is sound in a well-selected group of patients.

Penetrating wounds of the aorta are seen most infrequently, and one very rarely has an opportunity to treat such a patient surgically. Penetration of the aorta and the adjacent structures by a small-caliber missile will produce massive intrathoracic hemorrhage. The interlacing fibers of the heart will retard hemorrhage, and they will prevent it whenever the blood volume and the blood pressure have been lowered. The clot about the aorta may be contained and tamponaded by the surrounding structures. This phenomenon may allow ample time for exploration of the thorax, and for closure of the lacerations with digital pressure or with atraumatic clamps.

SUMMARY

1. Only rarely will surgeons see a patient with a ruptured thoracic aorta. Since approximately 20 per cent of patients with traumatic thoracic aortic ruptures survive the initial injury long enough to

Figure 7. Photograph taken at time of surgery showing containment of the hematoma by the adventitia and surrounding mediastinal tissues.

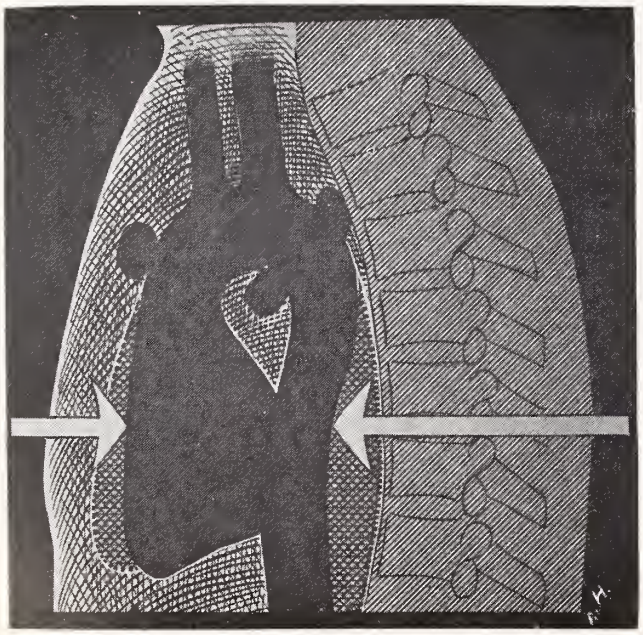


Figure 8. Drawing showing the usual sites of rupture of the thoracic aorta after non-penetrating trauma to the thorax.

Figure 9. Drawings of a patient in a hypothermic bath and a patient undergoing left atrial-femoral artery bypass.

permit further appropriate surgical treatment, all efforts should be made to get them to the operating room.

2. The diagnosis is usually made on the basis of a history of trauma to the thorax and on evidence of severe shock not commensurate with the external findings, if there is a bruit audible on auscultation over the posterior thorax, widening of the mediastinum with or without pleural effusion, or evidence of disruption of the aorta following aortography.

3. Treatment consists of adequate control of the aorta above and below the site of rupture, resection of the ragged edges, and either end-to-end anastomosis or the use of a woven fabric graft whenever necessary. Most commonly the methods of choice are a left atrial-femoral artery bypass, or occasionally the use of hypothermia alone, or both. Rarely, an aorta-aorta bypass around the lesion is used.

4. There are indications that traumatic aneurysms whose walls have been completely replaced by firm scar and calcification should not be resected, and that the thorax should be closed. These patients should be closely observed at intervals for evidence of activity in the form of enlargement of the false aneurysm.

5. Penetrating wounds of the aorta with survival for any length of time are very rare, but with the help of the natural forces of the body, an occasional patient in this group may be salvaged.

REFERENCES

1. Parmley, L. F., Mattingly, T. W., Manion, W. C., and Jahnke, E. J., Jr.: Non-penetrating traumatic injury of aorta. Circulation, **17**:1086-1101, (June) 1958.
2. Spencer, F. C., Guerin, P. F., Blake, H. A. and Bahnson, H. T.: Report of fifteen patients with traumatic rupture of thoracic aorta. J. Thor. Cardiov. Surg., **41**:1-22, (Jan.) 1961.
3. Groves, L. K.: Traumatic aneurysm of thoracic aorta. New Eng. J. Med., **270**:220-224, (Jan.) 1964.
4. Zehnder, M. A.: Delayed post-traumatic rupture of aorta in young healthy individual after closed injury: mechanical-etiological considerations. Angiology, **7**:252-267, (June) 1956.
5. Dalith, F.: Diseases of aortic arch and brachiocephalic arteries; concept of pathogenesis. JAMA, **185**:710-712, (Aug.) 1963.

Malabsorption Syndrome in Iowa

THOMAS H. KENT, M.D., and
JAMES A. CLIFTON, M.D.
Iowa City

IN RECENT YEARS, methods of diagnosis and treatment of patients with intestinal malabsorption have improved greatly. Because of these improvements, we felt that it would be of value to review our experience with the malabsorption syndrome at the University of Iowa. This report will be limited primarily to methods we have used and to cases we have studied at University Hospitals. For a more complete discussion of the laboratory tests for malabsorption, the mechanisms of malabsorption and the various diseases that have been associated with malabsorption, the reader is referred to a recent review by Jeffries, Weser and Sleisenger.[6]

Non-tropical sprue—also called adult or childhood celiac disease and idiopathic steatorrhea—was a poorly defined entity until (1) Dicke[1] found that a wheat-free diet resulted in consistent improvement, (2) Paulley[2] in 1954 demonstrated in surgical specimens that the small intestinal mucosa was abnormal, and (3) Shiner[3] in 1956 and Crosby[4] in 1957 developed biopsy instruments that could be swallowed easily and passed into the small intestine. Another malabsorption entity, Whipple's disease, was thought to be a fatal disease of unknown cause until bacteria were identified by electronmicroscopy in small-intestinal biopsy specimens, and until treatment with antibiotics produced clinical improvement and regression of the small-intestinal lesion.[5] Other causes of intestinal malabsorption now are diagnosed more easily because non-tropical sprue and Whipple's disease can be excluded by means of intestinal biopsy. Improvements in absorption tests also have facilitated the detection and the differential diagnosis of malabsorptive diseases.

METHODS

All patients who had peroral intestinal biopsies from 1959 to July, 1964, were selected for study. Adequate data were available on 93 of 104 such

The study reported in this paper was supported in part by grants AM-02534 and 3-T1-AM-5390 from the National Institute of Arthritis and Metabolic Diseases, National Institutes of Health. Dr. Kent was a resident in pathology at the U. of I. when this study was made. He is now in military service. Dr. Clifton is a professor of internal medicine.

patients. Other patients with malabsorption were seen during those years, but this report is limited to those who had intestinal biopsies. Methods used to study patients suspected of having malabsorption can be divided into two groups: (1) those used to determine the presence or absence of malabsorption, and (2) those used to diagnose the underlying cause.

Methods of determining malabsorption: A. The clinical history is of great importance in the selection of patients for detailed study. Patients with steatorrhea (malabsorption of fat is one of the cardinal features of more general malabsorption) have large, bulky, light-colored, extremely foul-smelling stools. Occasionally diarrhea is not a prominent symptom, but careful questioning will elicit a description of fatty stools. Most patients with malabsorption lose weight, and a detailed record of body weight is quite helpful.

B. Abnormal physical signs are few, and evidence of weight loss may be the only one. Few of the patients whom we have seen have been emaciated or have had clinical evidence of vitamin deficiency.

C. Tests for malabsorption of fat include microscopic examination of the stool for fat droplets (normal: 1-4 large droplets per high-power field), rise in serum optical density after a fatty meal (normal >0.100),[7] serum carotene (normal >75 μgm. per 100 cc.), excretion of I^{131}-labeled triolein in three-day stool collection (normal <5 per cent), or chemical measurement of fat in a three- to six-day stool collection taken while the patient is eating a known fat intake (normal <5 per cent of intake).

These tests are listed in order of increasing technical difficulty as well as increasing reliability. Although we use a battery of fat-absorption tests, including chemical fat balance in selected cases, we utilize the I^{131}-triolein excretion as the best compromise between minimum technical difficulty and maximum reliability. The I^{131}-triolein test will not detect mild degrees of steatorrhea. The rise in serum optical density after a fatty meal and the serum carotene are useful screening tests.

D. The D-xylose absorption test is a much more reliable index of carbohydrate absorption than is a glucose tolerance test because D-xylose is affected less by general body metabolism. D-xylose absorption is normal (more than 5 Gm. in a five-hour urine sample collected after 25 Gm. of the sugar has been ingested) in patients whose steatorrhea is due to poor emulsification or digestion of fats, but it is decreased in patients who have abnormal small-intestinal mucosa or rapid transit of intestinal contents.

E. Small-intestinal disease can be implicated in malabsorption of vitamin B_{12} if radioactive Co^{60}-vitamin B_{12} is absorbed poorly after the addition of intrinsic factor. Other less-specific indices of malabsorption include hypocalcemia, hypopotassemia, hypoprothrombinemia and anemia.

Methods for identifying the diseases associated with malabsorption: A. The history and physical findings often will suggest the underlying cause of the malabsorption. A lack of specific history suggests non-tropical sprue or, though less likely, malignant lymphoma.[8]

B. We have used the Rubin biopsy tube* to obtain mucosal biopsies from the distal duodenum or proximal jejunum. The specimens were fixed in buffered formalin or Bouin's solution, photographed through a dissecting microscope and processed by routine histologic technics, with special attention to orienting the specimen. Careful handling, good fixation and proper orientation of biopsy specimens are mandatory if mucosal biopsy is to be a useful diagnostic tool.

C. Roentgenograms of the gastrointestinal tract are useful in demonstrating postoperative changes, diverticula, increased transit time and the so-called malabsorptive small-bowel mucosal pattern. This pattern, characterized by dilatation of bowel, and segmentation and flocculation of the barium, usually is associated with an abnormal small-bowel mucosa. It was present in eight of 11 cases of non-tropical sprue, in two cases of regional enteritis, in two cases of jejunal diverticulosis, in one case of irradiation reaction and in one case of Zollinger-Ellison syndrome. The pattern is not specific for malabsorption and may be found in a variety of other conditions.

D. Tests for liver and pancreatic function were performed in some cases. The secretin test for pancreatic function is occasionally helpful in establishing the diagnosis of chronic pancreatitis or pancreatic neoplasm. Bacterial cultures of the small intestine may prove useful in the future, but they were not used in this study.

RESULTS

Of the 93 patients who were biopsied, 54 had intestinal malabsorption, 22 had diarrhea without malabsorption, and 17 either were normal or underwent intestinal biopsies for other reasons. The causes of the malabsorption and the results of intestinal biopsy are given in Table 1. We were able to determine the cause in 48 of the patients in whom malabsorption was established. In six, the absorption tests were slightly abnormal, and no specific disease producing malabsorption could be identified. The use of several different tests and repetitions of the tests clarified the degree of malabsorption in all except those six patients.

Celiac disease: This disease is characterized by the onset, at any age and in either sex, of inter-

* W. E. Quinton Instrument Company, Seattle, Washington.

mittent episodes of steatorrhea. The essential factors in establishing the diagnosis are the characteristic small-intestinal mucosal lesion and a favorable response to treatment with a gluten-free diet. In this group of patients there were eight men and nine women. Their ages ranged from 26 to 75 years. Most had four to six bulky, malodorous stools per day. The duration of diarrhea ranged from two months to 19 years, and averaged two years. The patients had had an average weight loss of 25 pounds. Nine patients denied earlier episodes of diarrhea. Fourteen had a markedly abnormal small-intestinal mucosa, and three had a moderately abnormal mucosa. The appearance of jejunal mucosa as seen through the dissecting microscope and on routine cut sections is shown in Figures 1-4. The changes in the intestinal mucosa are not specific for sprue but are seldom found in other conditions. We found a similar lesion in a patient with acute regional enteritis and in a patient with transient malabsorption of unknown cause.

Twelve patients improved after eating a gluten-free diet, although several did not adhere to the diet closely and had only slight improvement. Four patients were lost to follow-up, and one patient died of pneumonia before treatment became effective. One patient whose disease responded favorably to a gluten-free diet also had malignant lymphoma and died.[8] Seven of 10 celiac disease patients who had serial biopsies after treatment showed some regression of the lesion. Many patients had trouble eating a gluten-free diet because of the problem of eliminating wheat, barley, buckwheat, and rye from the diet. Other features of the sprue patients included an abnormal small-intestinal roentgenographic pattern in eight of 11 cases; serum carotene less than 27μgm. per 100 cc. in all cases; hemoglobin less than 10 Gm. per 100 cc. in four of 15 cases; megaloblastic bone marrow and poor intestinal absorption of vitamin B_{12} in two cases; serum calcium level below 8 mg. per 100 cc. in five cases; tetany as a major clinical problem in one case; and evidence of pancreatic disease in one case.

TABLE I

DIAGNOSIS AND RESULTS OF INTESTINAL BIOPSY IN PATIENTS STUDIED FOR MALABSORPTION

	Number of Cases	Severity of Malabsorption Severe	Mild	Abnormal Intestinal Biopsy
Non-tropical sprue	17	17	0	17
Post-gastrectomy steatorrhea	8	6	2	0
Diabetic steatorrhea	4	1	3	0
Pancreatic steatorrhea	5	3	2	0
Whipple's disease	3	2	1	3
Jejunal diverticulosis	2		2	0
Small bowel resection	2	2		0
Ulcerative colitis, regional enteritis	4	1	3	2
Other causes	3		3	0
Cause not found	6		6	2
Diarrhea without malabsorption	22			0
No diarrhea or malabsorption	17			0

Post-gastrectomy steatorrhea: All eight patients with post-gastrectomy steatorrhea had had partial gastric resection and gastrojejunostomy. The mechanism of steatorrhea in these patients is unknown, but lack of adequate mixing of bile and pancreatic juice with food, growth of bacteria in the blind duodenal loop and rapid transit in the small intestine have been considered important factors. One patient improved after the gastrojejunostomy had been converted to a Billroth I anastomosis, and one improved with tetracycline therapy. Response to treatment with pancreatin, bile salts and low-fat diet was inconclusive. Three patients had very low D-xylose absorption in spite of a normal intestinal mucosal biopsy.

Diabetic steatorrhea: Steatorrhea generally occurs only in severe diabetics who have evidence of neuropathy. The mechanism is not known. The four patients in this group ranged in age from 34 to 54 years, and had had diabetes mellitus for periods ranging from eight to 20 years. D-xylose absorption was severely depressed, averaging 2 Gm. in a five-hour urine sample, and steatorrhea was comparatively less pronounced.

Pancreatic steatorrhea: Steatorrhea in pancreatic disease is caused by a deficiency of fat-splitting enzymes. Two patients had pancreatitis associated with alcoholism; two had cystic fibrosis of the pancreas; and one had mild pancreatic disease of unknown cause. These patients tended to have severe steatorrhea but essentially normal D-xylose absorption. For example, one patient excreted nearly 100 per cent of a fat meal in the stool, but had 4.2 Gm. of D-xylose in the five-hour urine sample. Responses to pancreatin, bile salts and low-fat diet were variable.

Whipple's disease: This uncommon disease is characterized by the onset in middle-aged men of variable and migratory joint symptoms, followed in a few years by malabsorption. The disease is rare in women. The main features are steatorrhea; weight loss; mild, generalized lymph-node enlargement; mildly increased skin pigmentation; high erythrocyte sedimentation rate; and high anti-streptolysin-O titer. A biopsy of the small- intestinal mucosa reveals the striking and diagnostic lesion (Figure 5). Details of our experience with three cases are reported elsewhere.[5] The minute gram-

Figure 1. This dissecting microscopic view of a 5 mm.-wide peroral jejunal-mucosal biopsy specimen demonstrates the normal finger-like appearance of the villi.

Figure 2. This dissecting microscopic view of a specimen similar to that in Figure 1 demonstrates the appearance of jejunal mucosa in non-tropical sprue. The surface is nearly flat (compare with Figure 4).

Figure 3. The normal jejunal mucosa has tall villi lined by orderly-arranged epithelial cells with basal nuclei. The crypts are short, and the lamina propria contains relatively few inflammatory cells.

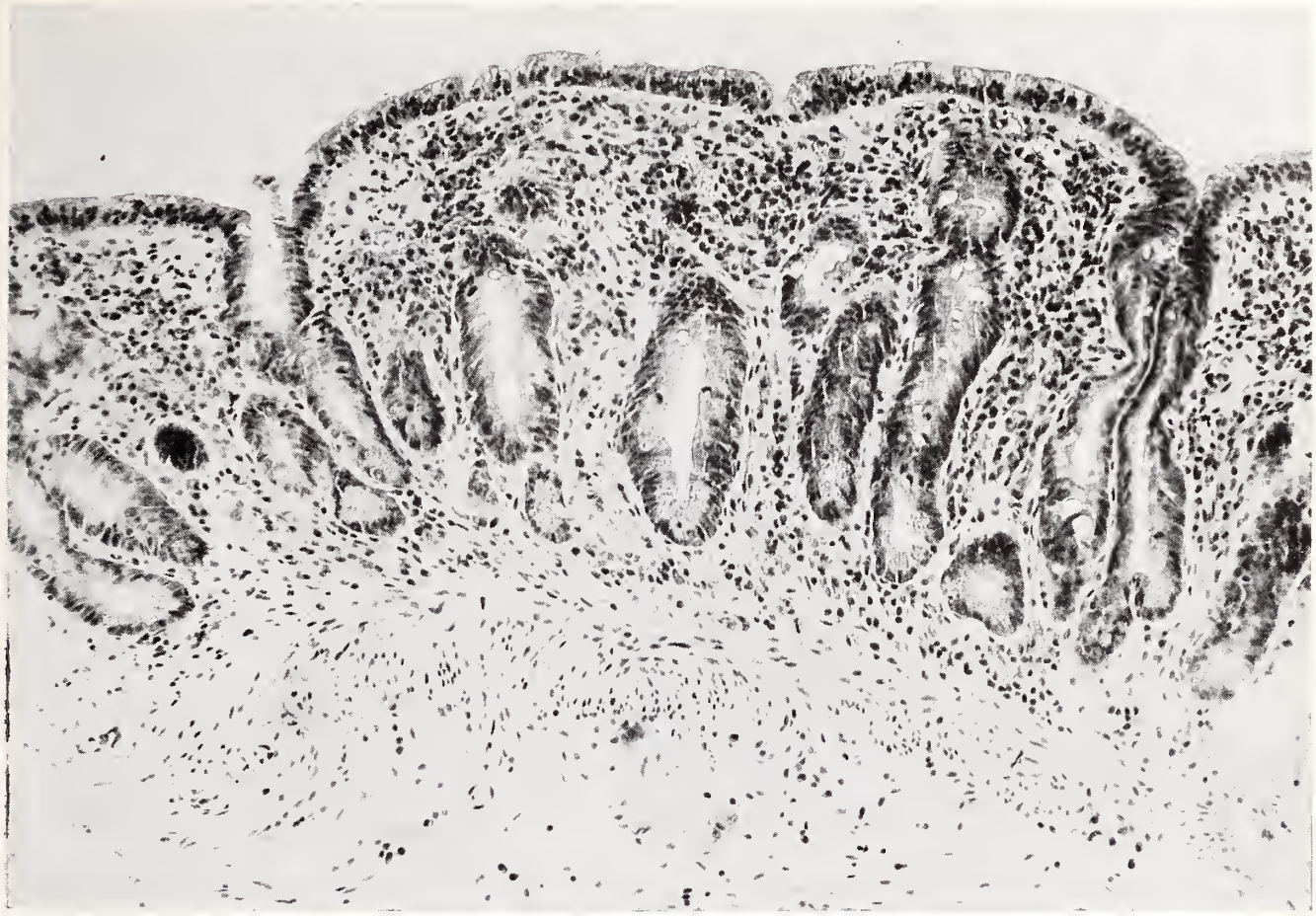


Figure 4. In untreated non-tropical sprue, the mucosa is usually flat and the crypts extend to the surface. The epithelial cells are disorderly and more cuboidal than normal. The lamina propria contains a dense chronic inflammatory-cell infiltrate.

positive bacteria found in the intestinal mucosa are seen best by electronmicroscopy. They have not been cultured, but they disappear after antibiotic therapy. Two of our patients have shown remarkable clinical improvement and regression of the small-intestinal lesion after tetracycline therapy; the other patient died before it became known that antibiotics were effective. The evidence now available suggests that these patients need antibiotic therapy for many months or even years. Adrenal glucocorticoids occasionally are of additional benefit.

Other cases of malabsorption syndrome: Other conditions associated with malabsorption included jejunal diverticulosis (2 cases); regional enteritis (3); ulcerative colitis with ileal involvement (1); partial small-bowel resection (2); abdominal irradiation for carcinoma of the cervix (1); Zollinger-Ellison syndrome with hyperparathyroidism (1); and exudative enteropathy (1). The six patients in whom no cause for the malabsorption was found included four persons over 66 years of age with mild malabsorption and multiple diseases. One of these had mild inflammatory changes in the intestinal mucosa.

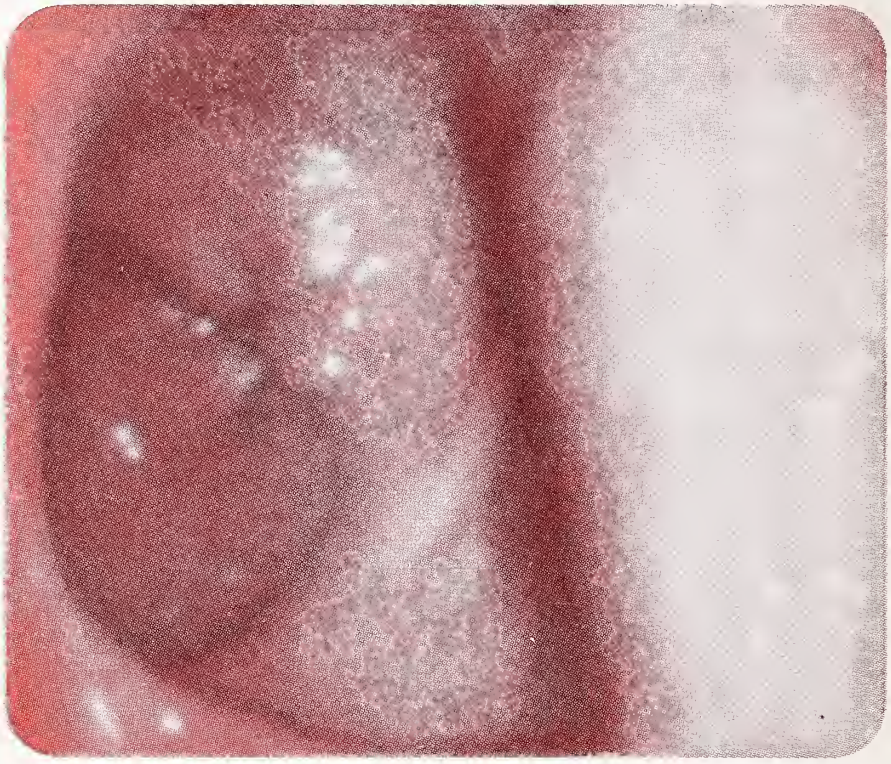
Diarrhea without malabsorption: Of 22 patients studied, five had diabetes mellitus, five had functional bowel symptoms, three had malignant lymphoma, and two had cirrhosis. All of these patients had a normal small-intestinal mucosa.

DISCUSSION

This study of 54 cases of malabsorption syndrome illustrates the effectiveness of current diagnostic methods in determining the underlying disease process. A battery of absorption tests in conjunction with the clinical history enables the physician to estimate the degree of malabsorption.

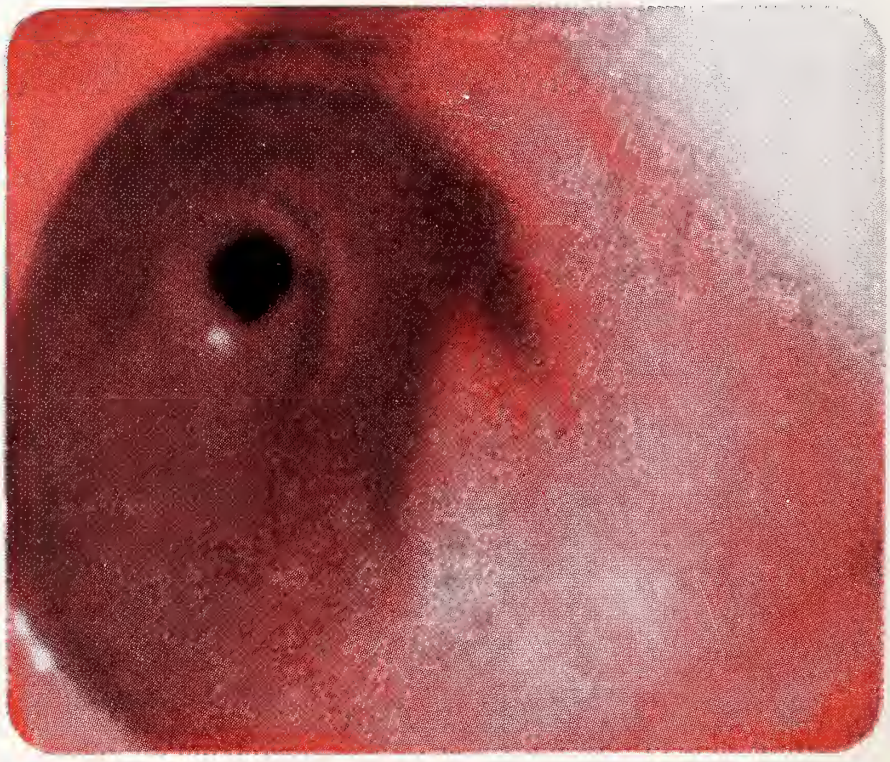
The development of intestinal biopsy has greatly aided in the diagnosis of non-tropical sprue, and has simplified the diagnosis of Whipple's disease. The lesion in patients with tropical sprue resembles but is less severe than that in patients with non-tropical sprue. Tropical sprue, as its name implies, occurs almost exclusively in the tropics or subtropics; it usually is associated with a megaloblastic anemia and mouth ulcers; it responds to folic acid, vitamin B_{12} and tetracycline therapy; and it is not related to gluten ingestion.

Intragastric photography studies[1]



A/ E. B., male, age 48. Normal antral contraction. Pyloric opening is not seen. It is difficult to differentiate a deep prepyloric contraction from a "pyloric fleurette" or true pylorus.

B/Same subject after 6 mg. of propantheline bromide intravenously; antral contractions ceased. The pyloric orifice remained open and was easily identified. Better visualization of the antrum was also obtained.



Now you can see Pro-Banthine® at work
(propantheline bromide)

Pro-Banthīne is so effective in anticholinergic action that it may be employed in visualizing the entire pyloric region.

In addition to the intragastric photographs, cinegastroscopic studies[2] have demonstrated graphically not only its effectiveness but the superiority of Pro-Banthīne over belladonna alkaloids.

Pro-Banthīne produced complete cessation of gastric, antral and pyloric motor activity with a dose of 6 mg. intravenously. This is approximately one-third the usual oral dose of 15 mg.

Atropine at full normal dosages did not produce such cessation. It required double the usual oral dose of atropine, 0.8 mg. intravenously, to duplicate the aperistaltic action of Pro-Banthīne. This dose of atropine produced pronounced discomfort and tachycardia with ventricular rates as high as 150 per minute.

It is this pharmacologic superiority of Pro-Banthīne which has made it the most widely prescribed anticholinergic in such conditions as peptic ulcer, functional hypermotility, irritable colon, pylorospasm and biliary dyskinesia.

Dosage—The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15 mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily.

Side Effects and Contraindications—Urinary hesitancy, xerostomia, mydriasis and, theoretically, a curare-like action may occur. The drug is contraindicated in patients with glaucoma or severe cardiac disease.

Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type ampuls of 30 mg.

1. Barowsky, H.; Greene, L., and Bennett, R.: Investigators' Clinical Report. Photographs courtesy of Drs. H. Barowsky, L. Greene and R. Bennett.
2. Barowsky, H.; Greene, L., and Paulo, D.: Paper read at Meeting of American Society for Gastrointestinal Endoscopy, Montreal, Canada, May 25-27, 1965.

SEARLE

Research in the Service of Medicine

In regional enteritis and malignant lymphoma[7] associated with malabsorption, a sprue-like mucosal lesion occasionally is present in the upper small intestine.

The diseases that have been associated with intestinal malabsorption make a long list, but many of them are rare and will not be discussed here. In Iowa, one of the most important causes of severe malabsorption is non-tropical sprue. The disease sometimes goes unrecognized for years because patients may become accustomed to malnutrition and abnormal bowel movements, and fail to seek medical aid. The diagnosis usually is based on the intestinal biopsy findings, but since the small-intestinal lesions are not specific for non-tropical sprue, the response to treatment with a gluten-free diet is an essential diagnostic feature. This response is measured by weight gain, improved absorption tests and improvement in the mucosal lesion.

The details of dietary therapy have been outlined by Collins and Isselbacher.[10] Since patients with non-tropical sprue have to eat a gluten-free diet throughout the remainder of their lives, the diet should not be prescribed unless the diagnosis has been firmly established. The course of malabsorptive diseases is notoriously erractic, and clinical improvement coincident with the administration of a gluten-free diet in itself does not establish the diagnosis of sprue.

Whipple's disease was an autopsy diagnosis until the 1950's. At least in part, it is thought to be due to bacterial infection, and should be recognized antemortem. Although the evidence is limited, it appears that Whipple's disease can be controlled by means of antibiotic therapy.

Treatment of malabsorption due to other diseases depends upon the treatment of the underlying disease or upon the correction of the mechanism responsible for the malabsorption.

SUMMARY

A careful history and a detailed physical examination, followed by appropriate absorption tests, gastrointestinal x-rays and mucosal biopsy of the small intestine, usually will reveal a specific cause for malabsorption. Within the past few years, specific therapy has become available for at least two of these malabsorptive diseases. With proper diagnosis and proper treatment, many of these patients can live a normal life span.

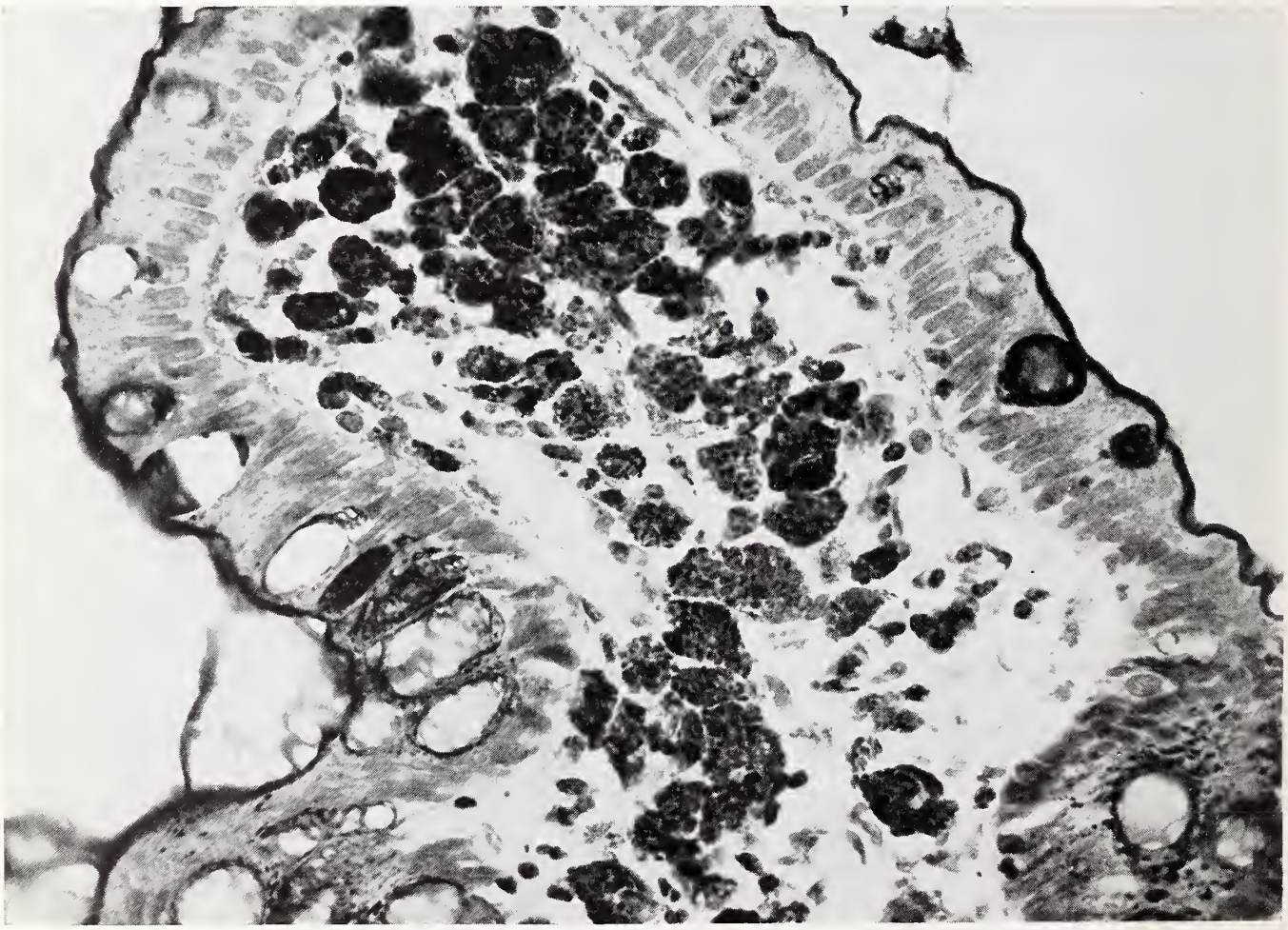


Figure 5. The small-intestinal villi in Whipple's disease are wider than normal because of the infiltration of the lamina propria with the characteristic macrophages containing PAS-positive granules. In contrast to sprue patients, the epithelium in patients with Whipple's disease is normal.

REFERENCES

1. Dicke, W. K., Weijers, H. A. and van de Kamer, J. H.: Coeliac disease; II. The presence in wheat of factor having deleterious effect in cases of coeliac disease. Acta Paediat., **42**:34-42, 1953.
2. Paulley, J. W.: Observations on aetiology of idiopathic steatorrhoea; jejunal and lymph-node biopsies. Brit. Med. J., **2**:1318-1321, (Dec. 4) 1954.
3. Shiner, M.: Jejunal-biopsy tube. Lancet, **1**:85, (Jan. 14) 1956.
4. Crosby, W. H. and Kugler, H. W.: Intraluminal biopsy of the small intestine. The intestinal biopsy capsule. Am. J. Dig. Dis., **2**:236-241, (May) 1957.
5. Kent, T. H., Layton, J. M., Clifton, J. A. and Schedl, H. P.: Whipple's disease: light and electron microscopic studies combined with clinical studies suggesting infective nature. Lab. Invest., **12**:1163-1178, (Dec.) 1963.
6. Jeffries, G. H., Weser, E. and Sleisenger, M. H.: Malabsorption. Gastroenterology, **46**:434-466, (Apr.) 1964.
7. Horsley, A. W., Clifton, J. A., Connor, W. E. and Evans, T. C.: Screening test for malabsorption syndromes. Proc. Soc. Exp. Biol. & Med., **100**:588-591, (March) 1959.
8. Kent, T. H.: Malabsorption syndrome with malignant lymphoma. Arch. Path., **78**:97-103, (Aug.) 1964.
9. Brandborg, L. L., Rubin, G. E. and Quinton, W. E.: Multipurpose instrument for suction biopsy of esophagus, stomach, small bowel, and colon. Gastroenterology, **37**:1-16, (July) 1959.
10. Collins, J. R. and Isselbacher, K. J.: Treatment of adult celiac disease (non-tropical sprue). New England J. Med., **271**:1153-1156, (Nov. 26) 1964.

University of Iowa
College of Medicine

Clinical Pathologic Conference

CLINICAL SUMMARY

A 16-YEAR-OLD WHITE MALE entered the University Hospitals with the chief complaints of weakness and easy bruising. His family said that he had been "pale" for several weeks prior to his admission. One week before entrance, he had experienced nocturnal nose bleeds, easy bruising and formation of a hematoma around his left eye following minimal trauma. Petechiae had appeared over his legs. Several days later, he had developed severe shortness of breath during a basketball game. His family doctor had found him anemic and had referred him to the University Hospitals.

Upon admission, the patient stated that his blood count had been normal seven months previously. Questioning revealed that while working on his car he had been exposed to naphtha fumes in an unventilated space. He frequently had both inhaled the fumes and spilled the liquid on his skin. Over the preceding year he had been given several short courses of oral chloramphenicol (Chloromycetin) for sore throats, the last occasion having occurred several weeks before admission. The total number of capsules administered was about 20. Aside from some mild anorexia, the patient felt well. He denied hemoptysis, hematuria, melena, or rectal bleeding. He had experienced no chills, fever or weight loss. As a child, he had contracted viral infections. There was no history of previous operations, and he had no known allergies. His family history was unremarkable.

On physical examination, the patient was a thin, pale, well-developed boy in no apparent distress. His blood pressure was 140/70 mm. Hg, his pulse was 80/min. and regular, and his respiratory rate was 20/min. The body temperature was 99.4° F. rectally. Many petechiae were noted over the lower extremities, trunk, and upper thorax, and small ecchymotic areas were present near the left eye and in the right biceps area. There were a few petechiae in the oral cavity. Shotty adenopathy was present in the inguinal and posterior cervical areas, and in the right axilla. Two tender 2 x 2 cm. nodes were present in the left axilla. The eyegrounds were normal. The chest was normal in shape and configuration, and the lungs were clear to percussion and auscultation. The heart was not enlarged, its rhythm was regular and no murmurs were audible. The abdomen was scaphoid, and on deep inspiration the splenic tip was palpable 2 cm. below the left costal margin. The edge was firm and non-tender. No other abdominal viscera or masses were palpable. No bone pain was elicited.

The patient's admission hemoglobin level was 7.5 Gm. per cent, with a hematocrit of 20 per cent, a red blood cell count of 2.33 million/cu. mm., and a white blood cell count of 1,950/cu. mm., with a differential of 8 per cent segs, 40 per cent eosinophils, 84 per cent lymphs, and 4 per cent monocytes among the 50 cells studied. The platelet count was 10,000/cu. mm., and the reticulocyte count was 0.3 per cent. The erythrocyte sedimentation rate was 19 mm./hr. by the Westergren method. Urinalysis was negative to chemical and microscopic examination, except for a trace of

protein. The bleeding time was over 10 minutes, and the coagulation time was 16 minutes. No clot retraction was present in two hours. A sulfobromophthalein sodium (BSP) test showed 16 per cent retention in 45 minutes. Bone-marrow aspiration was read as hypocellular, with lymphocytes the predominant cells. Platelets were sparse. The ratio was: 2 per cent RE cells, 88 per cent lymphocytes, 1 per cent myelocytes, 1 per cent metamyelocytes, 2 per cent eosinophils, 1 per cent plasma cells, 2 per cent monocytes, 1 per cent mast cells, and 2 per cent erythroid elements. A sternal marrow biopsy revealed hypoplasia (on smear and section) without evidence of abnormal cells.

Initially, the patient was placed in protective isolation and was observed. During his first week of hospitalization, he had a low-grade fever, with one spike to 102.4° F. rectally. He experienced recurrent mild nose bleeds. On the ninth hospital day, the patient's hemoglobin was found to be 5.9 Gm. per cent, and his white blood cell count 3,000/cu. mm., and he had no detectable platelets. His ESR had risen to 60 mm./hr. He was transfused with one unit of whole blood. The next day his body temperature rose to 103.8° F. (R), and he complained of a sore throat. Two blood cultures and a throat swab culture were taken. The blood cultures were subsequently reported as showing no growth, and the throat culture as showing a few beta-hemolytic Streptococci, presumptively Group A.

The patient was being given the second of two units of blood ordered for that day when he vomited 400 ml. of dark brown material which showed 2+ on the Meyer's test for blood. He also developed a nosebleed. He was thought to be somewhat confused, but a neurologic examination was within normal limits. Because of the possibility of a transfusion reaction, the blood was stopped and he was treated with Diphenhydramine hydrochloride (Benadryl) and acetylsalicylic acid. Penicillin therapy was also begun.

The next day the patient had no further bleeding, and his vital signs were stable. However, he was still febrile and he became progressively more lethargic. A red, macular rash was noted over his face. Neurologic examination in the early morning was essentially normal. One hour later, his left pupil was noted to be dilated and fixed. The deep tendon reflexes became hyporeactive. He developed bilateral, sustained ankle and knee clonus, a bilateral extensor, plantar response, bilateral Hoffman's sign, and a moderate degree of nuchal rigidity. His optic discs were flat, and several subhyaloid retinal hemorrhages were seen on the left. He became progressively obtunded and finally was unresponsive on the left side to painful stimuli. The extremities on the left were held in extensor rigidity. There were several brief episodes of opisthotonos. Skull roentgenograms were interpreted as being normal. A lumbar puncture revealed an opening pressure of over 500 mm. H_2O and a grossly bloody spinal fluid. The supernatant fluid was deeply xanthochromic. The Pandy test was positive, and the spinal fluid protein was reported as 1 Gm. per cent. No white blood cells were seen after lysis of the red cells with HCl.

The patient's course worsened. He vomited small amounts of bloody fluid. Despite transfusions with fresh whole blood, he became progressively less responsive to all stimuli, and his pupils became dilated and fixed. He was pronounced dead on the twelfth hospital day.

CLINICAL DISCUSSION

Dr. R. L. Givler, Pathology: Dr. Carter will discuss the clinical protocol.

Dr. R. E. Carter, Pediatrics: It is evident from the first paragraph of the protocol that a profound depression of the bone marrow was taking place in the child. The symptom triad of anemia, bleeding and infection has been so recognized for years in medicine. Robin first described marrow cells in 1849, Neumann and Bizzozero outlined the role of the bone marrow in blood cell production in 1868, and in 1888 Ehrlich described the disease he called "aplastic anemia" with remarkable clinical clarity. His original description is said to have characterized it as "a rapidly fatal process occurring in young adults between the ages of 15 and 30, associated with high fever, bleeding and ulcerations of the mucous membranes." Lymphadenopathy and splenomegaly were said to have been included in his early account, but unfortunately I could not locate the original for verification. By 1897, benzene was a known cause of aplastic anemia.

In addition to anemia, the patient had a profound thrombocytopenia. Petechiae are stressed in the history. Nosebleeds occurred without trauma or nasal infection, and these are events which make me consider thrombocytopenia or a capillary defect such as von Willebrandt's disease, to the exclusion of nearly all other conditions.

In fact, the most surprising feature of the patient's history is that he was playing basketball such a short time before his admission to this hospital and at a time when he had a major bleeding tendency and evident anemia. This fact can only be ascribed to the remarkable stamina of youth, to the inability of certain athletic coaches to make proper value judgments, or to the mental confusion of some athletes.

Two points regarding the etiology of bone-marrow depression should be discussed in connection with the present case. The first is the naphtha; the second is the chloramphenicol. By naphtha, I presume our historian meant "solvent naphtha" rather than "heavy naphtha." If such is the case, we are discussing the light oil fraction obtained from the

distillation of coal tar, or more accurately a mixture of aromatic hydrocarbons and unsaturated aliphatic hydrocarbons. Such a fraction would contain numerous chemical agents capable of damaging the bone marrow. Specifically, it would contain residual benzene and methyl-benzene from the distillation process. I imagine that the actual amount present in commercial naphtha would depend on the cost of the commercial product, and hence on the care used in distillation. Here is a case where knowing the brand name might be helpful. Heavy naphtha or naphthalene has been associated with marrow aplasia, but less frequently.

Benzene has been recognized as a bone-marrow toxin for many years, and its commercial use is carefully controlled for this very reason. The mechanism of benzene's action on the marrow is not known, except that it seems to exert its effect at a point in cell maturation beyond the primitive hematopoietic reticuloendothelial cells. Benzene poisoning has two interesting features. First, it can be associated with a rather marked eosinophilia. Second, in animals given prolonged courses of benzene in doses sufficient to produce anemia but not total aplasia of the marrow, a condition known as "benzene leukemia" develops. A pronounced leukemoid reaction takes place in the marrow. In some instances, one sees marrow overgrowth, with a primitive cell population. Argument exists as to whether this is a true leukemia or not.

I must comment on the use of chloramphenicol, since I presume it was one of the reasons the present case was considered for a clinical pathologic conference. For the benefit of the students, I shall restate some basic medical dicta. Chloramphenicol must be used only when the severity of the infection warrants, and with full recognition on the part of the physician of the dangers inherent in its use. It is advisable to have culture evidence and sensitivity-test evidence of the specific need for chloramphenicol before it is employed.

Clearly, there are exceptions to this last dictum. Bacterial meningitis and septicemia must be treated rapidly and effectively before bacterial diagnoses can be obtained from the laboratory. But I shall stress one point again. There is no medical excuse for using chloramphenicol for average or minor infections. The drug is a known cause of marrow aplasia. There appears to be no test that can be employed either before or during its use which will accurately forecast impending marrow depression in most patients. The most commonly affected individuals appear to be preadolescent females, but there are many notable exceptions to this generality. Blood counts must be made on patients receiving the drug, and the drug must be discontinued when a significant reduction in the white count, or reticulocytes, or platelets occurs. Perhaps this type of action will save some patients from disaster, but for many, unfortunately, it will be locking the barn door after the horse has departed. And, if this does not convince you, read recent reports of the AMA Council on Drugs, where in the list of chemicals associated with marrow aplasia, chloramphenicol leads all the rest!

The physical examination is interesting from the following points of view. First, the presence of lymphadenopathy must be explained. Second, the palpable spleen needs explanation. I shall assume that the patient had no infection that would account for his lymphadenopathy and splenomegaly at the time of examination. I assume that the axillary nodes were not associated with skin infections on the hands or arms. Only two processes remain. First, there is the possibility that these nodes were associated with a malignant process of the hematopoietic system, as was the splenomegaly. Second, the hyperplasia of the nodes could represent a tendency on the part of the patient to produce antibodies against infecting viral or bacterial organisms. In children with cyclic or persistent neutropenia (and often with little evidence of persisting chronic infection), considerable hyperplasia of lymph nodes will occur. Active germinal centers and numerous plasma cells are histologic characteristics. Presumably this response represents an exaggerated antibody production. It seems unlikely that this patient could have had his neutropenia long enough for this to happen.

Before we leave the lymph nodes, I should mention lymphoma (specifically Hodgkin's) as a possible cause of the patient's disease picture. Eosinophilia, leukopenia, lymphadenopathy and anemia (possibly on a hemolytic basis) can be explained by a Hodgkin's granuloma, if sufficient involvement of the marrow with a fibrotic-like reaction has occurred. It seems unlikely that this patient had had his disease long enough for this to be the case. A final possibility is miliary tuberculosis as a cause of marrow depression, lymphadenopathy and splenomegaly. In this instance, the child should have been more obviously ill, by the time his marrow became so depressed.

The laboratory findings confirm our suspicion that this child was anemic and thrombocytopenic. His normocytic and normochromic anemia suggest decreased red-cell production, and the results of the marrow aspiration bear this out. No estimate of the actual cellularity of the marrow has been given us, and probably none was possible, aside from an observation regarding the paucity of cells on smear. We shall assume that there were some cells there, and of the ones present, the great majority were lymphocytes. This point may be more important than it would first appear. Except in an almost totally destroyed marrow, 88 per cent lymphocytes is unusual and suggests a leukemic process, in and of itself. The upper limit of lympho-

cytes in a normal childhood marrow is taken as 30 per cent, except during a brief period below two years of age when 40 per cent is considered the upper range of normal. For a diagnosis of leukemia, must this increase in marrow lymphocytes consist of blast forms? This is a debatable question in certain cases, and it might best be answered by saying that while the presence of increased blast forms would establish the diagnosis of leukemia, the absence of blast forms in *one* marrow aspirate does not completely exclude the diagnosis when there are an abnormally large number of marrow lymphocytes. Therefore, the question of leukemia must remain open at this time. The presence of enlarged nodes and an enlarged spleen, and the presence of 88 per cent lymphocytes in the marrow aspirate make me highly suspicious, but the information given in the protocol prevents me from being certain.

I return to the question of aplastic anemia. I have already said that we do not know the mechanism by which certain drugs destroy the bone marrow, but we can speculate about certain possibilities. The first, obviously, is a direct toxic effect on the precursor marrow cells. The second is an alteration in the intercellular substance of the marrow in which the cells grow. Very few marrow cells lie immediately adjacent to a blood vessel or sinusoid. The great majority depend on the transport of nutrients across intercellular substances, which may or may not exist in proper amounts or forms to play this role. The problem may also be related to marrow-cell release to the peripheral circulation, and some investigators have postulated a "sticky" marrow—a marrow which cannot release its cells easily. These conditions give rise to the paradox of a cellular marrow in the face of depleted peripherally circulating cells. A characteristic of many cases of benzene anemia is the cellular appearance of the marrow, a fact that for some time confused the investigators who were studying the effects of this chemical.

A third cause of aplasia may be the destruction of another type of germinal cell, the large lymphocyte. In normal people this cell is responsible for repopulating the marrow, some of the time. This theory was originally developed by Maximow in what was a truly remarkable feat of scientific observation, when one considers the limited resources at his disposal. It has since been largely confirmed by isotopically labelled cells and other devices. Perhaps the poison damages large lymphocytes. Finally, we are learning that many people have temporary periods of marrow arrest associated with some infections or after long periods of marrow overactivity. Perhaps certain cases of bone-marrow aplasia stem from this beginning.

Let's turn to the patient's hospital course. The fact that he was febrile could indicate two things. The first and most likely possibility is that he had a sepsis, despite the negative results on two blood cultures. This must remain a moot point, and certainly antibiotic therapy, whenever possible, must await the demonstration of an infecting organism on culture. It is doubtful that there is any benefit from prophylactic antibiotics in these instances, and considerable harm may result from their indiscriminate and ill-planned use. The second explanation for fever could be the presence of a lymphoma or leukemic process. I shall not discuss the use of testosterone or steroid hormones. Instead, I refer the reader to recent texts and articles on that subject.

From this point forward in the protocol, one's attention must be focused on the patient's central nervous system. The development of neurologic symptoms was related to the syndrome of compression of the patient's midbrain due to a sudden increase in intracranial pressure. Uncal or incisural herniation of the temporal lobe occured, with lateral displacement of the midbrain, and compression of the posterior cerebral artery and the third cranial nerve on the left. The lack of papilledema would indicate that this was a recent development. The bilateral clonus, the bilateral extensor plantar responses and Hoffman's signs would not necessarily localize the lesion or point to anything more than a general increase in intracranial pressure or cerebral edema. The dilated fixed pupil on the left points to third-nerve compression with paralysis of the parasympathetic component. The ipsilateral extensor rigidity would indicate interferences with the long descending motor pathways due to displacement of the midbrain and compression of the corticospinal tracts on the right side of the midbrain above the decussation. Loss of consciousness results from disturbance in the function of the reticular formation in the midbrain, and it is probable that Duret hemorrhages were found in this area resulting from obstruction of venous drainage. If a true sensory deficit existed, it can be assumed to have resulted from disturbance of the sensory pathways in the midbrain.

The spinal-fluid findings show that the patient had a subarachnoid hemorrhage, that he had a markedly increased intracranial pressure, and that the protein content of the spinal fluid was higher than one might expect from a subarachnoid hemorrhage alone. What lesion caused his subarachnoid hemorrhage and the increase in intracranial pressure?

The possibility of a vascular anomaly always exists—an arterial aneurysm which bleeds slowly at first, and finally bleeds rapidly and massively. Unless slow bleeding had been present for some time before our patient's massive hemorrhage, I should have difficulty in accounting for his unusually high protein. It is possible that this child had spontaneous bleeding from a meningeal vessel due to his thrombocytopenia. We fear this in any patient with a low platelet count, but it is a surprisingly infrequent event. I have heard of only

one such case in 11 years, and have never seen one personally, despite my considerable exposure to thrombocytopenic children. Again, even if such were the case, we would have difficulty in explaining the high spinal fluid protein, even if we could account for the massive nature of the hemorrhage. There is a remote possibility that this patient may have had a vasculitis, with associated platelet thrombi and petechial hemorrhage in his brain substance, Moschcowitz's disease or thrombocytopenic purpura. Clinically his initial mental confusion was somewhat suggestive of it, and part of his subsequent neurologic signs could be on this basis, though it is unlikely that they could *all* be accounted for in this way.

I should assume that cryptococcic meningitis was excluded by the failure to demonstrate organisms in the spinal fluid. Such a condition must always be borne in mind, in a patient such as this, and might have set the stage for a massive bleeding. Similarly, a brain abscess or mycotic aneurysm might have been present. The patient was septic and could have developed a brain abscess in the left hemisphere. Finally, many of his symptoms could have resulted from miliary tuberculosis, with terminal hemorrhage from vessels involved in a tuberculoma. I cannot explain the red, macular rash on his face, but a blotchy redness or "tache cerebrale" would fit many intracranial conditions.

None of these possibilities can be excluded with absolute certainty, but none of them are so attractive as the concept that this child had a chloromatous tumor of his brain—an infiltrate of malignant hematopoietic cells in the left hemisphere, which was associated ultimately with the rupture of a major blood vessel and with hemorrhage into the substance of the brain, breaking through into the subarachnoid space. The possibility of a tumor meningitis or leukemic meningitis seems to have been excluded by the absence of leukocytes in the cerebrospinal fluid after lysis of the red cells. Thus the infiltrate must have been subcortical in nature.

I now am confronted by the problem that one frequently faces in clinical pathologic conferences. I should like to conclude that this patient had a leukemia associated with a marked hypoplasia of his bone marrow, and that he had a chloromatous tumor of his brain which set the stage for his terminal massive intracranial hemorrhage. But there is really insufficient evidence in the protocol to justify such a diagnosis, and it is poor medical practice to guess. There is ample evidence in the protocol, however, for the diagnosis of aplastic anemia, and a patient with aplastic anemia has many possible reasons for intracranial pathology, some related to his primary condition, others not. The patient died of increased intracranial pressure from an intracranial hemorrhage compressing his midbrain. We shall leave it to the pathologist to tell us the specific etiology of the intracranial hemorrhage. I have speculated long enough.

Dr. Givler: Dr. Nishioka, do you have any comments on the neurologic picture in this case?

Dr. H. Nishioka, Surgery: From a neurosurgical standpoint, the patient had an acute subarachnoid hemorrhage and probably an intracerebral hemorrhage as well. It could have been primarily a subarachnoid hemorrhage secondarily dissecting into the brain, or primarily an intracerebral one which secondarily leaked into the subarachnoid space or into the ventricular system.

We have evidence of a lateralized lesion with blood in the cerebrospinal fluid. We have dilatation of the left pupil, which in most cases is a better lateralizing sign than is the extensor rigidity. The left pupil would fit with a left-sided lesion, but unfortunately the left-sided extensor rigidity would not. Compression of the left side of the left cerebral peduncle produces extensor rigidity on the *right* side. The only explanation for the findings in this case, then, is that a herniation came from the left side and pressed directly on the left third nerve, pushing the brain stem over to the right and pressing the right cerebral peduncle against the edge of the tentorium. Whether that is the proper anatomical explanation, I don't know, but it is the most commonly invoked explanation.

Given, then, a patient who has obvious evidence of a bleeding tendency and profound thrombocytopenia, even though we do have evidence of marked intracranial pressure, we can't do anything about it surgically. There is the possibility that the hemorrhage has come from an arteriovenous malformation or an aneurysm, but even if this were so, it would be impossible to attack it surgically. Under the circumstances, therefore, our hands are tied. We are unable to consider doing any diagnostic study or any surgical procedure to remove any collection of blood. If we were to find an intracerebral hematoma and evacuate it, there is no guarantee that the sources of bleeding would not continue to pour blood into the cavity.

There is one other comment I'd like to make regarding the incidence of usually-fatal intracranial hemorrhages in the leukemias and the lymphomas. In an excellent review of about 1,200 cases at Ohio State University about four years ago, approximately 800 cases of leukemia were reviewed, and approximately 100 of the patients were found to have died of intracranial involvement. Those, of course, were the minimum. Some of the remaining 700 may have died at home of intracranial hemorrhages that were never diagnosed as such. Thus at a minimum, approximately 100 patients died in the hospital of a major intracerebral lesion. Eighty-five of those deaths were due to hemorrhage, and in each of the remaining 15, leukemic infiltrates acted like a mass lesion. In the 450-odd cases of malignant lymphomas, on the other hand, the incidence of mass lesions—i.e., granulomatous le-

sions acting as a mass—was about three times greater than the incidence of massive intracerebral hemorrhage. Hemorrhages were proportionally less common than in the leukemias.

Dr. Givler: At autopsy there were two major findings. Widespread petechial and ecchymotic hemorrhages involved the skin, serosal membranes and the parenchymas of many organs. The immediate cause of death did relate to intracerebral hemorrhage. An area of recent hemorrhage 6 cm. in diameter was present in the frontal lobe, with rupture into the lateral ventricle. Since no causal lesion for the hemorrhage was demonstrated, I attribute the hemorrhage to the thrombocytopenia. The second major finding was a severe degree of bone-marrow hypoplasia, which was the patient's underlying disease. A gross photograph of the patient's brain showed an area of leptomeningeal hemorrhage overlying the intracerebral hemorrhage in the left frontal lobe. Microscopically, the area of parenchymal hemorrhage in the brain showed congested vessels with perivascular cuffs of red blood cells at the periphery of the diffusely hemorrhagic cerebral tissue. There was no glial proliferation or Gitter-cell formation. In keeping with the patient's leukopenia, there was a paucity of leukocytes in the area of hemorrhage and within the blood vessels. The lungs showed multiple pleural petechiae and scattered parenchymal hemorrhages.

A photomicrograph of the bone marrow taken for biopsy one week prior to death showed that the intertrabecular spaces contained adipose tissue with few hematopoietic cells. There was no evidence of leukemia. Descriptively, the diagnosis would be bone-marrow hypoplasia, severe. In cases of aplastic anemia, the marrow may be hypoplastic, as in the present case, or as Dr. Carter indicated, it may be normocellular or hyperplastic. It is most helpful to have sections of the marrow so that one can evaluate the cellularity. It is interesting that some reported cases of aplastic anemia have shown hypocellular smears of marrow, whereas other sections have shown the marrow to be hypercellular. It is not necessary to resort to an open biopsy or to a core biopsy to get marrow for sections. One can generally get enough fragments of marrow for sectioning at the time of aspiration of the marrow. After preparing marrow smears, one can simply aspirate a bit more marrow and express it on a glass slide, tilt the slide, aggregate the marrow particles into a fibrin marrow ball by means of a needle, and place it in a fixative.

At autopsy, the majority of marrow sections showed totally aplastic marrow. There were areas of hemorrhage and ectatic venous sinuses stuffed with erythrocytes. Under higher magnification the few cells remaining were disposed about small blood vessels and appeared to be small lymphocytes. In aplastic marrows, it is characteristic to see this lymphocytic population, and at times some admixed plasma cells. This should not be construed as evidence of an early leukemia. In some cases more florid degrees of lymphocytosis can be seen in aplastic marrows, suggesting a true increase rather than an unmasking of lymphocytes already present in the marrow by dropout of the myeloid and erythroid series.

Dr. S. E. Ziffren, Surgery: What piece of bone is that, in the photograph which you have shown us?

Dr. Givler: I don't know. The section isn't specifically labeled as to source. It is medullary bone and probably was from the vertebra.

Regional variations in the degree of cellularity of hypoplastic marrows aren't unexpected. This particular area was more cellular than the other areas sectioned, but it was still more hypocellular than normal, and the marrow adjacent to it was totally aplastic. With respect to the problem of getting a specimen most representative of a patient's marrow activity, I can say that vertebra, iliac crest, and sternum generally seem fairly parallel in cellularity in most adults. One is more likely to find scattered fatty areas in the ribs. This more cellular area of marrow in the present case showed a sprinkling of lymphocytes and rather few myelocytes. Under lower magnification one could see a small number of myelocytes or an eosinophilic myelocyte isolated in fatty marrow. Rather than forming solid areas of hematopoiesis, as actively proliferating marrow should, all were similarly isolated. The darkly staining cells arranged in small clumps were more numerous and belonged to the erythroid series. A section of lymph node displayed a rather florid degree of follicular hyperplasia. In higher magnification, the cellular composition of the follicle's germinal center and of adjacent node pulp had features of reactive hyperplasia.

In summary, this patient had a severe degree of marrow hypoplasia consistent with a toxic depression. There was no difference between marrow taken for biopsy one week before death and the bulk of marrow taken at autopsy. Since recovery of the marrow is the most important aspect of cases of marrow aplasia, one looks at any residual foci of hematopoiesis with considerable interest. Whether the more cellular area seen in this case represents a beginning regional repopulation of the marrow, or as is more likely the case, whether it represents one of the residual foci of functioning marrow is a question that cannot be answered.

As for negative findings, there was no evidence of leukemia or lymphoma. The differential diagnosis of patients with aplastic anemia might well include a preleukemic state. This diagnosis must be a retrospective one, confirmed by clinical follow-up, which in this case was precluded by the patient's death. However, the marrow sections in this case contained no evidence of a disturbing proliferative activity. As is often the case, the clinical history suggests not just one, but two possible causative agents.

Dr. Berry, would you discuss the problem of evaluation of exposure to potential marrow toxins such as naphthol?

Clyde M. Berry, Ph.D., Agricultural Medicine: The difficulty in attempting to identify the exact chemical constituents of a generic substance such as naphtha is very considerable. Expanding upon Dr. Carter's approach, I'd like to say that the naphtha could have come from either of two sources. It could have come from petroleum or from coal tar. If it were from petroleum, one would be forced to go back to the crude from which it came. Crudes have four general categories. In an aliphatic crude there is a straight chain compound. In an olefinic crude, there are unsaturated bonds —either two or three unsaturated linkages. It might be an aromatic, and in the aromatic there is a benzene-type ring with an unsaturated ring structure. A naphthenic crude has a circular, completely saturated six-carbon or larger molecule.

So one starts with four different kinds of crudes. A refining process takes place in a fractionating tower, and the individual side streams are taken off at various levels from the top to the bottom. The composition of any particular fraction will depend upon the temperature of the stream, the particular properties of the tower itself and the rate of feed. So the problem becomes even more complicated.

There is no way of determining what is in a particular petroleum naphtha, and the same thing is true of a naphtha from coal tars. It could come either from the destructive distillation of coal, such as you might have in a byproduct coke oven, or from a condensate in the manufacture of a kind of illuminating gas, such as water gas or manufactured gas. In either case the material comes from coal, terminates in a run-down tank, and passes through a fractionating tower in exactly the same way.

I have checked the definitions of *naphtha* in three different source books, and I have found no agreement on the distillation range. The figures run all the way from 60-120° C. to 80-460° F. Thus naphthas can vary widely, depending upon their sources and depending upon their boiling ranges. The main constituents themselves will vary. There are heavy naphtha, petroleum naphtha, coal tar naphtha, and particular kinds of naphtha that are identified in terms of their performance, rather than of their composition. "Stoddard solvent" is a typical example. It is the solvent used for degreasing auto parts in a repair shop, and it has been used in dry-cleaning establishments. Varnish makers' and painters' naphtha is a very heavy aromatic naphtha. Going back to the Stoddard solvent, I might point out that various companies make different grades, depending upon the aromatic content. In general, the material contains a mixture of compounds of the 6- to 12-carbon length. They can be chained and they can be aromatic.

So I can't provide much help as regards the constituents of naphtha. The brand name wouldn't provide a useful clue. Even if you had the can, it would be impossible to determine the qualities of the material to which the patient had been exposed, since the material is sold for its performance. Under the dictates of such factors as price and availability, it is entirely feasible to blend various streams to get satisfactory performance.

It might be a little more productive to look at the likelihood of an excessive exposure during the sort of activity a youngster would be engaged in. If he were a hotrodder, he might have been working on a car, probably degreasing parts. If he were degreasing parts, then he probably wouldn't be exposed to excessively high concentrations, for if his solvent contained much above 1,000 parts per million of hydrocarbon, he would sense marginal anesthesia, get a little dizzy, and probably open the windows. Very definitely it couldn't have gone to 10,000 parts per million, because at that range there would have been a definite fire hazard that the manufacturer couldn't possibly risk. He probably was exposed to relatively moderate concentrations of a mixture that *could* have contained benzene, and the duration of his exposure was short. From watching my own boy work on cars, I should think it unlikely that his exposure to this material would explain the difficulty—unless he were unusually sensitive or did his own mixing, using some unusual concentrations of benzene.

I wish I could help you more, but instead I think I've probably confused you.

Dr. Givler: Dr. Carter, do you have any comments?

Dr. Carter: Was there actual herniation of the cerebral peduncle on the ipsilateral side?

Dr. Givler: The prosector did not describe any, and there was hemorrhage in the mesencephalon.

Dr. Carter: Do we know that thrombocytopenia was related to the hemorrhage?

Dr. Givler: Just by exclusion.

Dr. Carter: I'm confused about the node. The architecture did not look too good. Were the lymphocytes outside the germinal follicles mature?

Dr. Givler: Yes, they were small lymphocytes. The question of architecture of lymph nodes has been overstressed as a differential point for malignancy. Cytologic features are equally important. I didn't say the architecture did not look good. One should use the term *architecture* to refer to such points as preservation of sinuses, capsular integrity, preservation of primary cortical follicles, etc. The "normal" architecture of a lymph node depends to some extent on the age of the patient and on its location in the body. In this case the outstanding feature was marked follicular hyperplasia, but well within the range of reactive hyperplasia. It has no specific significance in terms of

what causes it. Lymphoid tissue in children and young adults, whether it be in nodes, the spleen, or bowel mucosa, can show a striking proliferative response, typically with active-phase germinal centers.

Dr. I. M. Smith, Internal Medicine: Dr. Carter, in what percentage of patients could you say that aplastic anemia is due to a single agent, and in how many is it caused by two or more?

Dr. Carter: I don't know. I am sure Dr. Hamilton will agree that it is very hard to know what really caused it. In this case we were fortunate to have two possible agents—unsaturated hydrocarbons from the naphtha and chloramphenicol.

Dr. G. R. Zimmerman, Pathology: Dr. Sheets, was this not your patient, and didn't you say that he was dizzy after using this solvent?

Dr. R. F. Sheets, Internal Medicine: I saw him on the ward on hematology rounds. It is common practice in garages to keep a can of solvent with a paintbrush in it for the mechanics to use in removing grease from auto parts. Recently there has been an innovation. A high-pressure nozzle is substituted for a paintbrush. With the nozzle, great clouds of fumes are generated. This boy had headaches only when he had used the high-pressure nozzle and inhaled the fumes.

Dr. Givler: According to some reported series, intracranial hemorrhage is one of the commoner causes of death in aplastic anemia—if one uses *aplastic anemia* in referring to patients with hypofunctional marrows, regardless of the morphologic degree of the marrow cellularity.

Dr. W. L. Jackson, Pediatrics: Was there any evidence of liver damage?

Dr. Givler: None that was evident morphologically.

ANATOMICAL DIAGNOSES

1. Hypoplasia of bone marrow, severe, with pancytopenia
2. Intracerebral hemorrhage
3. Multiple hemorrhages involving skin, lungs, diaphragm and other viscera
4. Pulmonary edema
5. Hyperplasia of lymph nodes.

DR. CARTER'S DIAGNOSES

1. Aplastic anemia
2. Intracranial hemorrhage with compression of midbrain.

Coming Meetings

IN STATE

Nov. 3-5	**65th Annual Conference, Iowa Welfare Association,** Hotel Savery, Des Moines.
Nov. 4-6	**Postgraduate Conference on Arthritis and Related Disorders,** University of Iowa College of Medicine, Room E-331, Medical Amphitheater, University Hospitals, Iowa City.
Nov. 10	**Symposium on Pediatric Problems, Iowa Chapter of AAGP and Lederle Laboratories,** Hotel Savery, Des Moines.
Nov. 13	**Mercy Hospital Medical Day,** Des Moines.

CONTINENTAL U. S.

Nov. 1-4	**Annual Meeting of Southern Medical Association Section of Ophthalmology,** Houston, Texas.
Nov. 1-5	**Psychiatry for the Internist—American College of Physicians,** University of Colorado Medical Center, Denver, Colorado.
Nov. 3	**Symposium on Cardiac Disabilities,** Mount Sinai Hospital Medical Center, Chicago.
Nov. 3-4	**American College of Clinical Pharmacology and Chemotherapy,** Knickerbocker Hotel, Chicago, Illinois.
Nov. 3-4	**Seminar on Restoration of Functions in Chronic Respiratory Diseases,** Hammack Auditorium, Menorah Medical Center, Kansas City, Missouri.
Nov. 3-5	**New England Postgraduate Assembly,** Statler Hilton Hotel, Boston, Mass.
Nov. 3-6	**14th Annual Meeting of the American Society of Tropical Medicine and Hygiene,** Roosevelt Hotel, New Orleans, Louisiana.
Nov. 4-6	**47th Annual Meeting, Southwestern Medical Association,** Sheraton Motor Inn, El Paso, Texas.
Nov. 4-6	**American Society of Cytology,** Statler Hilton Hotel, New York, New York.
Nov. 5	**International College of Surgeons—Illinois Division Meeting,** Urbana, Illinois.
Nov. 8-11	**Western Hemisphere Congress on Nutrition, American Medical Association,** Chicago, Illinois.
Nov. 8-12	**Review of Advances in Internal Medicine, The American College of Physicians,** Kronish Auditorium, Maimonides Hospital of Brooklyn, 4802 Tenth Avenue, Brooklyn, New York.
Nov. 8-12	**Occupational Health for Nurses,** New York University Medical Center, New York.
Nov. 9-13	**50th Anniversary Convention, American Medical Women's Association,** Sheraton-Chicago Hotel, Chicago.
Nov. 10-12	**Fractures and Joint Injuries,** University of Colorado School of Medicine, Denver, Colorado.
Nov. 10-13	**Conference on Obstetric and Neonatal Nursing, District VI of the American College of Obstetricians and Gynecologists,** Pick-Congress Hotel, Chicago.
Nov. 11-13	**Inaugural Scientific Program** of the new Ancker Hospital (St. Paul-Ramsey Hospital), St. Paul, Minnesota.
Nov. 11-13	**Fifth Annual Milwaukee Medical Conference,** Coffey Auditorium, Milwaukee County Hospital, Milwaukee, Wisconsin.
Nov. 11-13	**Gerontological Society,** Ambassador Hotel, Los Angeles, California.
Nov. 12	**8th Annual Symposium on Diabetes,** Bigler Auditorium, Children's Memorial Hospital, Chicago, Illinois.
Nov. 12-13	**Society of Clinical Surgery,** Admiral Benbow Inn, Jackson, Mississippi.

Nov. 12-14	**Second Annual Conference on Respiratory Therapy,** Statler Hilton Hotel, Boston, Massachusetts.
Nov. 13-15	**Annual Meeting, Wisconsin Society of Pathologists,** Milwaukee, Wisconsin.
Nov. 14-19	**American Academy of Ophthalmology and Otolaryngology,** Palmer House, Chicago, Illinois.
Nov. 15-17	**72nd Annual Convention of the Association of Military Surgeons of the United States,** Washington Hilton Hotel, Washington, D. C.
Nov. 15-17	**Medical Society of District of Columbia,** Washington Hilton Hotel, Washington, D. C.
Nov. 15-18	**50th Annual Scientific Assembly, Interstate Postgraduate Medical Association,** Cleveland Auditorium and Sheraton-Cleveland Hotel, Cleveland, Ohio.
Nov. 15-19	**Diagnosis and Treatment of Diseases of the Heart and Lungs, American College of Chest Physicians,** Barbizon Plaza Hotel, New York City, New York.
Nov. 15-19	**16th Annual Meeting, Animal Care Panel,** Sheraton Hotel, Philadelphia, Pennsylvania.
Nov. 15-19	**Postgraduate Course on General Practice Review,** Medical College of Georgia, Medical College Campus, Augusta.
Nov. 15-19	**Postgraduate Course in Pathophysiological Basis of Therapeutics, American College of Physicians,** University of Kentucky Medical Center, Lexington.
Nov. 16	**Something About High Blood Pressure,** Holiday Inn, Kearney, Nebraska.
Nov. 16-17	**Postgraduate Course in Cardiorespiratory Physiology Applied to Clinical Practice, American College of Cardiology,** Medical College of Virginia, Richmond.
Nov. 17	**Symposium on CVA-Stroke,** Mount Sinai Hospital Medical Center, Chicago.
Nov. 17-20	**Postgraduate Course in Fractures and Other Injuries,** Marriott Motel Hotel, Dallas, Texas.
Nov. 17-20	**Third International Conference on Hyperbaric Medicine,** Duke University Medical Center, Durham, N. C.
Nov. 18-20	**Western Surgical Association,** Sheraton Fontenelle Hotel, Omaha, Nebraska.
Nov. 22	**Symposium on Clinical Aspects of Hodgkin's Disease,** New York Hilton Hotel, New York, New York.
Nov. 22-24	**15th Hahnemann Symposium, Cancer Chemotherapy: Basic & Clinical Applications,** Sheraton Hotel, Philadelphia, Pennsylvania.
Nov. 27	**Seventh Annual Conference on Medical Services,** Bellevue Stratford Hotel, Philadelphia, Pennsylvania.
Nov. 27-28	**Interim Meeting, American College of Chest Physicians,** Philadelphia, Pennsylvania.
Nov. 28	**Seventh National Conference on Medical Aspects of Sports,** Philadelphia, Pennsylvania.
Nov. 28-Dec. 1	**19th Clinical Convention, American Medical Association,** Philadelphia, Pennsylvania.
Nov. 28-Dec. 3	**Radiological Society of North America,** Palmer House, Chicago, Illinois.
Nov. 29-30	**Symposium on Biochemical and Pharmacological Aspects of Basal Ganglia Disease,** Columbia University College of Physicians & Surgeons, New York.
Nov. 29-Dec. 1	**American Electroencephalographic Society,** Americana Hotel, New York.
Nov. 29-Dec. 3	**5th Annual Postgraduate Course in Obstetrics & Gynecology,** Columbia University College of Physicians and Surgeons, Columbia-Presbyterian Medical Center, New York City.
Dec. 1	**Symposium on Arthritis and Orthopedic Disabilities,** Mount Sinai Hospital Medical Center, Chicago.
Dec. 1-4	**American Academy for Cerebral Palsy,** Sheraton-Cleveland Hotel, Cleveland.
Dec. 2	**American College of Physicians Texas Regional Meeting,** Houston.
Dec. 3-4	**Symposium on Macromolecular Metabolism, New York Heart Association,** Hotel Biltmore, New York.
Dec. 3-4	**American College of Physicians, New Mexico Regional Meeting,** Santa Fe, New Mexico.
Dec. 3-5	**American Psychoanalytic Association,** Commodore Hotel, New York.
Dec. 4	**22nd Annual Tumor Seminar, San Antonio Society of Pathologists,** Brooke General Hospital, Fort Sam Houston.
Dec. 4-9	**American Academy of Dermatology,** Palmer House, Chicago.
Dec. 5-7	**American Society of Hematology,** Sheraton Hotel, Philadelphia.
Dec. 6-7	**Symposium on Menstrual Mechanisms,** University of Colorado School of Medicine, Denver.
Dec. 6-10	**Postgraduate Course on Psychiatry for the Internist, American College of Physicians,** Los Angeles County General Hospital, Room 2A15, Los Angeles.
Dec. 7-9	**Southern Surgical Association,** Hot Springs, Va.
Dec. 7-10	**Postgraduate Course in Cardiology—1965, American College of Cardiology,** Scripps Clinic and Research Foundation, La Jolla, Calif.
Dec. 8-9	**Seminar on Maintenance and Restoration in the Aging Patient and Opportunities and Limitations in the Treatment of Alcoholism,** Hammack Auditorium, Menorah Medical Center, Kansas City, Missouri.
Dec. 8-10	**Hahnemann Symposium—New Concepts in Gynecological Oncology,** Sheraton Hotel, Philadelphia.
Dec. 8-10	**Second National Symposium on Coccidioidomycosis, Arizona Tuberculosis and Health Assn., Inc.,** Del E. Webb Towne House, Phoenix.
Dec. 8-10	**Kansas City Society of Ophthalmology and Otolaryngology,** Hilton Inn, Kansas City, Missouri.
Dec. 9	**American College of Physicians, North Carolina Regional Meeting,** Chapel Hill, North Carolina.
Dec. 9	**Second Industry Conference on Nonproprietary Nomenclature for Drugs,** New York City.
Dec. 10-12	**Initial Emergency Care and Transportation of the Sick and Injured, American Academy of Orthopaedic Surgeons,** Municipal Bayfront Auditorium, Miami.
Dec. 12-14	**International Conference on the Lymphatic System, Committee on Shock of the National Academy of Sciences—National Research Council—and Tulane University School of Medicine,** New Orleans.
Dec. 15	**Symposium on Degenerative Neurological Diseases,** Mount Sinai Hospital Medical Center, Chicago.
Dec. 26-31	**American Association for the Advancement of Science,** University of California, Berkeley.

ABROAD

Nov. 7-13	**Eleventh Triennial International Congress of Pediatrics,** Tokyo, Japan.
Dec. 3-5	**International Colloquium on Leptospiras,** Prince Leopold Institute of Tropical Medicine, Antwerp, Belgium.
Dec. 5-11	**11th International Congress on Rheumatic Diseases and Interim Meeting of the American Rheumatism Association,** Gran Hotel Provincial, Mar del Plata, Argentina.
Jan. 10-13	**Seventh International Symposium on Radioactive Isotopes in Clinical Medicine and Research,** Bad Gastein, Austria.
Jan. 20-22	**World Congress on Diabetes in the Tropics,** Bombay, India.

Editorials

DIGESTING OUR KNOWLEDGE

In the "olden days," it seemed that the "specialty" medical journals took time off to include in their agenda a thought provoking summary article on the current concepts of a particular subject. In the past few years, however, it has seemed that the editors of such "specialty" journals have bowed to the pressure put upon them by the tremendous volume of medical research that has been pouring out of our universities. Thus, the trend has been to create journals that are made up entirely of research articles, articles written on "way out" subjects, or descriptions of a few cases of unusual nature. Some of these articles are of inestimable value for the present and future of medicine, but some are mediocre and some are of no value whatsoever. The average reader of such "specialty" journals finds great difficulty not only in reading these articles, which most often have been written in a stereotyped style, but even in estimating their value. It is true that some of these journals have attempted to publish one article per month as a "review of the literature" of the past year, but such articles are often frightfully dull.

A few, such as J.A.M.A. have begun to include "Special Contributions," each of which has been written by an authority who tries to summarize knowledge on a given topic. Some older periodicals such as the "Clinics of North America" have long attempted to give the casual reader a digest of current thought. Recently, however, a new crop of monographic attempts have appeared. Excellent are the DM's (Disease of the Month), the many "tapes" for our recorders, and a bimonthly publication called MODERN TREATMENT.

We all need to stand back, every so often, and view the myriad articles written on unusual problems, far-advanced chemical research, or individual case reports, and view the forest as a whole, instead of the individual trees. We need to take cognizance of the paths which lead through the forest to the hill of progress beyond. We need to have the benefit of the judgment of experts as to the direction in which these paths may lead. We need, in short, more summary articles of an editorial nature. We need, further, to have their authors adopt the rather casual and humorous style of the British publications, rather than that of the serious, stereotyped, standard article of America. The general, summarizing function of these newer publications could well be again taken over by the "specialty journals." Perhaps the "high octane" journals should take another look at themselves and the message they hope to convey. Perhaps they should not take themselves so seriously.

—*Daniel A. Glomset, M.D.*

HOMOGRAFTS

A recently hospitalized patient, 77 years of age, underwent an exploratory laparotomy, was found to have an abdominal carcinomatosis, was treated with radioactive gold, and in due course was dismissed from the hospital to return home and await her future. During her hospital stay, multiple 3-4 cm. circular scars were noted on both thighs. Inquiry brought forth the story that the scars were donor sites from which skin had been taken for grafting. The recipient had been a badly burned close relative. Eight donors, so the story went, had been used in the skin-grafting process. All of the donors had been hospitalized and given general anaesthesia at the time of grafting.

One of the donors had been a very obese man, selected by the physicians, according to the narrative, because of his abundant surface area and generous supply of available skin. The burned patient had survived for approximately seven months following the grafting, and finally died of pneumonia. A total of 700 square inches had been grafted, and most of the grafting had been successful, the informant reported. The grafting had taken place in the year 1912, in Des Moines. Dr. C. C. Shope was one of the two physicians on the case; the identity of the other could not be recalled.

The use of homografts is still a respectable procedure. SKIN GRAFTING, a book by Brown and McDowell published in 1958, devotes an entire chapter to the subject of homografts. As a modern-day refinement, the authors recommend postmortem homografts rather than grafts taken from living donors, not because postmortem grafts are better, but because of the greater convenience and less commotion associated with their use. The authors make several points in respect to this type of grafting:

1. Homografting may be a life-saving measure. Large burned surfaces can be covered with a "biologic dressing" in those cases in which the patient himself has inadequate skin for the purpose.

2. Postmortem grafts should be taken from the donor within 1-2 hours after death. If the body is promptly refrigerated after death, grafts can be taken (although with some difficulty) up to 12 hours or more after death.

3. Sterile technic is used in removing the split-thickness grafts.

4. The donor skin can be preserved in a skin bank for approximately three weeks.

5. Homografts must be grafted with the same meticulous care as are autografts.

6. Homografts will live and grow for a time.

7. Homografts are all ultimately rejected by the host, except when the donor has been an identical twin. However, the grafts will usually survive 3-10 weeks before dissolution.

8. Blood-grouping has no significance in the use of homografts.

A physicist has written a book entitled THE EXCITEMENT OF SCIENCE. Somebody someday—somebody with a feeling for people and drama—should write a book about "the excitement of medicine." Ben Casey is not enough.

—*Daniel F. Crowley, M.D.*

FETAL TRANSFUSIONS IN ERYTHROBLASTOSIS FETALIS

The direct treatment of the human fetus in erythroblastosis fetalis has been accomplished. Future studies will clearly evaluate how much can be done in therapy of the fetus without jeopardizing his survival. Another question to be answered concerns the matter of who is to be the physician for the fetus. Will the pediatrician assume earlier responsibilities, or will the obstetrician broaden his treatment spectrum?

Three papers on treatment of the fetus in erythroblastosis from the International Congress on Intrauterine Fetal Surgery held at Howe, Vermont, on November 9, 1964, are presented in the May, 1965, issue of PEDIATRICS.[1, 2, 3] These presentations review work done at several centers. Heretofore, exchange transfusions have salvaged a great majority of non-hydropic liveborn infants, but of course such procedures could not benefit the infant who was in danger of dying before delivery. Infants have been delivered earlier than term for this purpose, but the mortality rate increased with prematurity. The remaining approach, then, was to transfuse the infant while still confined in the uterus.

Predicting intrauterine death in erythroblastosis fetalis on a basis of the history of disease and the maternal antibody titer alone is only limitedly accurate. However, spectrophotometric examinations of amniotic fluid obtained trans-abdominally at as early as 24 weeks' gestation has increased accuracy in predicting the severity of the disease to more than 95 per cent. The removal of amniotic fluid samples presents no risk to the mother, but if the placenta is traversed, her antibody titer may rise, and the severity of the disease in the infant may be increased.

Now, in instances where the fetus is severely involved, methods have been developed for doing intraperitoneal fetal transfusions. After amniographic assessment, and under radiographic control, percutaneous intraperitoneal transfusions of the fetus with packed erythrocytes can insure fetal survival to a more viable maturity, and can produce a baby in good condition for pediatric care. Without such treatment, babies subjected to such transfusions face a 100 per cent risk. As technics improve, experience has shown that fetal transfusion can save some 70 per cent of otherwise fatally-affected erythroblastotic babies. However, this survival rate falls to zero if treatment is delayed until after the fetus has developed gross hydrops and ascites.

Other centers are working on the possibility of approaching the fetus through hysterotomy, and doing transfusions directly to the fetus. As technics improve, exchange transfusions of the fetus may be possible by means of indwelling catheters.

Surely, the approaches to the fetus are exciting. Prenatal management of this one major disease may stimulate further efforts to achieve higher fetal-salvage rates in other conditions.

—*Marion E. Alberts, M.D.*

1. Bowman, J. M., and Pollock, J. M.: Amniotic fluid spectrophotometry and early delivery in management of erythroblastosis fetalis. PEDIATRICS, **35**:815-835, (May) 1965.

2. Liley, A. W.: Use of amnioscentesis and fetal transfusion in erythroblastosis fetalis. PEDIATRICS, **35**:836-847, (May) 1965.

3. Adamson, K., Jr., Freda, V. J., James, L. S., and Towell, M. E.: Prenatal treatment of erythroblastosis fetalis follow-hysterotomy. PEDIATRICS, **35**:848-855, (May) 1965.

EPIDEMICS OF WHOOPING COUGH CAN STILL OCCUR

An item in the Department of Health section of this issue of the JOURNAL reports an outbreak of poliomyelitis, much of it paralytic, in a British community, and an article in the September 11 issue of the BRITISH MEDICAL JOURNAL reporting on an epidemic of pertussis in a small town in Scotland* shows that whooping cough, too, is still a threat.

In February and March, 1964, about half of the 408 children under 15 years of age in a Peebleshire, Scotland, general practice were affected, almost regardless of whether they had been immunized and regardless of whether they had had a previous attack of whooping cough. It was thought that the mildness of most cases and the absence of complications may have been due either to the doses of vaccine which nearly all of the children had received, or to immunities conferred by previous attacks, but the causative organism may not have been especially virulent and/or the treatment may have helped limit the disease.

Among 73 children whose immunizations were judged to have been standard, 44 had coughs; 26 had paroxysms in the daytime and 15 at night; 9 vomited; 7 had whooping; and 2 had hemorrhage. Eleven of the 13 children at the local school who had previously had whooping cough developed coughs during the epidemic, and six of them had paroxysmal cough. Thus it appeared that neither

* Wilson, A. T., *et al.*: Whooping-cough: difficulties in diagnosis and ineffectiveness of immunization. BRITISH M. J., **2**:623-626, (Sept. 11) 1965.

Editorials continued...

vaccine nor a history of whooping cough afforded immunity.

The authors commented on the difficulties that they faced in diagnosing and controlling the disease. Because very few patients were brought to the doctors, at least at the start of the epidemic, the contagion was widespread before the physicians were made aware of it. Partially for that reason and partially because the immunizations were relied upon, many of the coughing children were allowed to continue attending school. Furthermore, biological confirmation of Bord. pertussis was successful only in a small percentage of cases. Eventually, many older people in the community contracted the disease.

The authors concluded: (1) that immunizations against pertussis were ineffective in preventing the spread of the epidemic; (2) that claims for an 80-90 per cent positive-culture rate for pertussis seem unduly optimistic, and that cultures are more likely to help confirm the nature of an epidemic than to help diagnose a particular case; (3) that whooping is of confirmatory rather than of diagnostic value; (4) that a previous attack of whooping cough gave inadequate protection in this epidemic; and (5) that quarantine is still necessary in the control of whooping cough.

DEAFNESS AND THE TEMPORAL BONE BANKS PROGRAM

If your patient's loss of hearing is the result of otosclerosis (a bony growth which immobilizes the stapes of the ear), if a punctured ear drum is interfering with his hearing, or if he was born without an ear canal but with a functioning inner ear, it may be possible to restore his hearing through ear surgery. On the other hand, if his hearing loss is due to nerve-deafness, if a serious infection has destroyed parts of the inner ear, or if the centers of interpretation in the brain are involved, his hearing loss may not yet be correctable by medical or surgical means.

Dr. Merle Lawrence, director of the Kresge Hearing Research Institute at the University of Michigan, reported recently that postmortem examinations of the inner-ear structures of persons who had been deaf have frequently indicated that their kinds of deafness might have been corrected. He said that general practitioners should not accept the supposition that a patient's deafness is incurable. Instead, they should arrange for a thorough examination to determine whether the loss of hearing may not be of a conductive nature caused by otosclerosis. He pointed out that this common type of hearing loss can be corrected by surgery in a very high percentage of cases, and that it is tragic for an individual to go through life with this or any other correctable form of hearing loss.

To advance research as rapidly as possible, men and women who are hard of hearing are being urged to bequeath their temporal bones, which contain the inner-ear structures, to the Temporal Bone Banks Program for Ear Research. The Temporal Bone Banks Program was established by the Deafness Research Foundation in 1960, in cooperation with the American Academy of Ophthalmology and Otolaryngology. It also has the support and cooperation of the National Institute of Neurological Diseases and Blindness. Thirty-nine Temporal Bone Banks (ear-research laboratories) participate in the program, and it is coordinated by the Deafness Research Foundation and its regional temporal bone centers located at leading universities.

An important point regarding the Temporal Bone Banks Program is that the "banks" are interested *only* in the temporal bones of persons who have had serious hearing losses or other ear disorders. The inner ears *are not* transplanted to people who cannot hear, but are carefully studied by researchers to learn the cause of the donor's deafness and to find clues as to the ways in which others may be helped to hear.

Financed by a grant from the John A. Hartford Foundation, the Deafness Research Foundation is conducting a nationwide public-education program to encourage those with ear disorders to bequeath their temporal bones to advance otologic research. An informative booklet and pledge forms may be obtained from the Deafness Research Foundation, 366 Madison Avenue, New York City 10017.

Mercy (Des Moines) Medical Day

SATURDAY, NOVEMBER 13, 1965

Except for the banquet, the meeting will be held in Mercy Hall, Mercy Hospital, Fifth and Ascension Streets. Parking adjacent to the Hospital will be reserved for physicians attending the meeting. The program is accredited for 3½ hours by the American Academy of General Practice.

1:30 p.m. WELCOME—Leo R. Pearlman, M.D., chief of staff

1:45 p.m. "Replantation of Amputated Extremities"—G. Rainey Williams, M.D., associate professor of surgery, University of Oklahoma

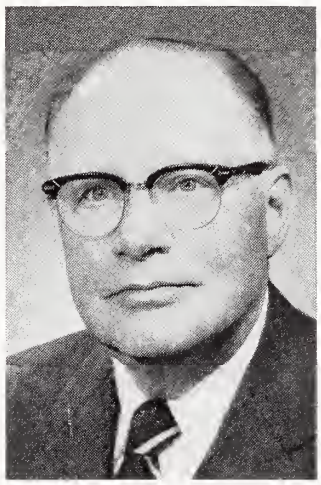
2:45 p.m. QUESTIONS AND ANSWERS

3:30 p.m. "The Treatment of Thermal Burns"—William W. Monafo, M.D., instructor in surgery, Washington University, St. Louis

4:15 p.m. QUESTIONS AND ANSWERS

6:30 p.m. SOCIAL HOUR AND BANQUET, Hotel Fort Des Moines
"Removing Barriers to Adequate Health Care"—Mr. Wilbur J. Cohen, undersecretary of Health, Education and Welfare.

President's Page



IMS representatives urged the following policies at the Medicare Orientation Conference, in Chicago on October 1, and at the special session of the AMA House of Delegates which followed it on October 2-3:

1. The usual, customary and reasonable fee concept must be maintained.

2. Each county medical society should assume responsibility for the effective operation of a claims-review committee, coordinated with the work of a state claims-review committee.

3. Decisions of county and state review committees must be sustained and respected.

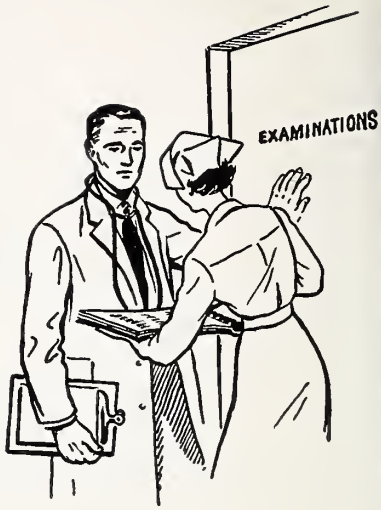
4. So that physicians may have maximum freedom in the conduct of their practices, they should look to their patients for payment of medical services—not to a third party.

5. Finally and most importantly, the state medical society must have an opportunity to express its preference in the selection of an administrative agent for the physicians' portion of the new Medicare Law.

Frank Oberg

President

THE DOCTOR'S BUSINESS



Should You Use Accelerated Depreciation?

HOWARD D. BAKER
Waterloo

Depreciation, in general, simply permits you, over a specified period of time, to recover the cost of assets which are used in a trade or business and which have a useful life in excess of one year.

There has been a great deal of discussion relative to methods of accelerated depreciation, and there seems to be a general misconception that they are always advantageous. Such is not the case; you must analyze your individual situation in order logically to decide which method is best for you to use.

In most situations where there is a steadily rising investment in depreciable assets, accelerated depreciation is advantageous. Old equipment can thus be written off promptly, and reserves can be accumulated faster for new capital investment. The opposite is true, however, if annual capital investments in depreciable assets are declining. In this situation income is only deferred to later years when your depreciation deduction will have been greatly reduced or exhausted.

Consideration must also be given to income trends over the "life" of the depreciable asset. If your income will be increasing or remaining constant over the period, it will be to your advantage *not* to accelerate depreciation, since you will be deferring income to years when your higher tax rates will more than offset the advantage you gained in earlier years. If your income can be expected to decline over the "life" of the asset, it will be to your advantage to accelerate depreciation by one of the allowed methods.

Another important consideration is the "life" used in depreciating the asset, and your present age. In the case of a building that is expected to have a "life" of 45 years, you should certainly consider accelerated depreciation, since even with such an arrangement, you probably will never recover its full cost. If you were to sell the building at a gain after holding it for at least 10 years, all of the gain, including that part of the gain attributable to accelerated depreciation would be a capital gain and only 50 per cent taxable.

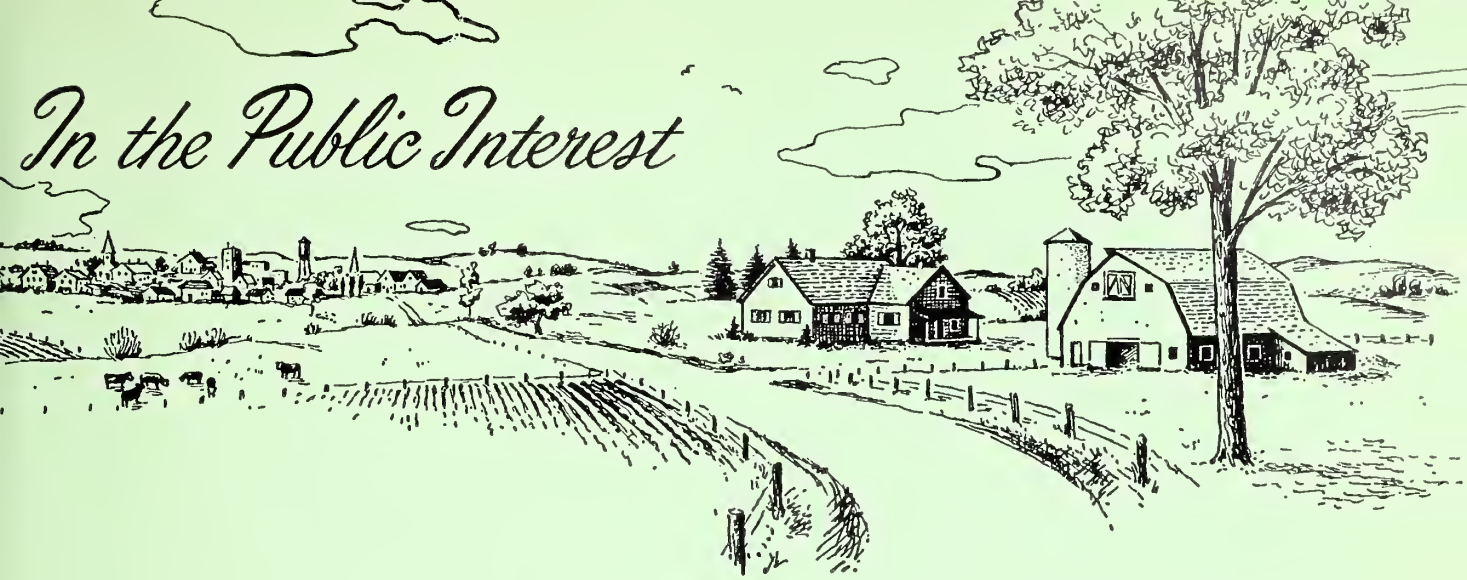
After considering your situation, if you will have steadily increasing capital investments, if your income will show a downward trend over the life of the asset, or if the asset is a building with a long life and you cannot expect to recover your cost by straight-line depreciation, it will probably be to your advantage to adopt one of the *other* methods of depreciation currently allowed. It must be remembered that depreciation is a recovery of cost, and any acceleration in early years will be offset by reduced depreciation in later years.

The following comparison demonstrates depreciation write-offs under the three methods now recognized by the Internal Revenue Service.

ASSET COSTING $5,000—USEFUL LIFE 5 YEARS

	Straight Line		Declining Balance		Sum of the Digits	
Year	Annual Deduction	Amount Recovered	Annual Deduction	Amount Recovered	Annual Deduction	Amount Recovered
1	$1,000	$1,000	$2,000	$2,000	$1,667	$1,667
2	1,000	2,000	1,200	3,200	1,333	3,000
3	1,000	3,000	720	3,920	1,000	4,000
4	1,000	4,000	432	4,352	667	4,667
5	1,000	5,000	259	4,611	333	5,000

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.



Physician-Pharmacist Cooperation

ROBERT B. THROCKMORTON
Des Moines

In discussing the subject assigned me, I think it desirable to place emphasis on one of the most critical problems confronting medicine and pharmacy today, namely the physician ownership of pharmacies. Section 7 of the Principles of Medical Ethics is specifically concerned with this and some closely related issues, and its three pertinent provisions are as follows: "In the practice of medicine, a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. . . . He should neither pay nor receive a commission for referral of patients. . . . Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interest of the patient."

Note that the key thought of Section 7 is that a physician should limit the source of his *professional* income to medical services actually provided by him. Obviously a physician may have investments and be a party to business ventures unrelated to the practice of medicine. He may operate a nursing home, if free choice of physician is granted to the patients. Clearly he may own a moderate amount of stock in a pharmaceutical manufacturing company. At what point and under what circumstances, then, does his income from such sources become his *professional* income? In the AMA Judical Council's interpretations of Section 7, fee-splitting is condemned, though a physician may accept a fee that he has fairly earned as an assistant at surgery even in the case of a patient whom he has referred. Commissions for the referral of patients are soundly condemned. Under Section 7, a physician is forbidden to charge a penalty if fees for his professional services are not paid on time, "since the practice of medicine is a profession and not a business."

Why may a physician derive *professional* income only from medical services rendered by him or under his direct supervision? First, he should not be tempted to engage in commercialism in order to increase his professional income; second, there should be no conflict of interest between physician and patient; and third, the physician's medical judgment should not be influenced by personal economic considerations.

It is well established by the Principles of Medical Ethics that physicians should recognize and promote pharmacy as a profession; that each patient is entitled to a copy of his or her prescription for drugs; and that each patient must have a free choice of pharmacist. It should be noted, however, that the medical profession is free to interpret, amend or modify the Principles of Medical Ethics, and that the Principles do not constitute law, but are standards whereby a physician determines the propriety of his own conduct.

MEDICINE WANTS TO PREVENT EXPLOITATION OF PATIENTS

In saying, "Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient," Section 7 of the Principles places the "burden of proof" upon the physician to demonstrate that drug dispensing is necessary in his practice. Contrastingly, it is AMA policy that a physician may not own stock in a drug-repackaging company, even if the firm does no business in the physician's practice area or if the physician (e.g. a radiologist) prescribes no drugs. This is the "Caesar's wife" approach. As regards physician ownership of pharmacies, after a period during which the AMA considered it unethical for a physician to own a pharmacy unless

---

Mr. Throckmorton is legal counsel for the Iowa Medical Society. This is an abbreviation of the address, "Ethical and Legal Responsibilities of Physicians and Pharmacists," which he gave at the First Iowa Congress of Medicine and Pharmacy, in Des Moines on September 26, 1965.

there were no other adequate drug store in his community, the following rule was adopted and is now in force: "It cannot be considered unethical for a physician to own or operate a pharmacy provided that there is no exploitation of the patient." This wording appears to shift the "burden of proof" to someone other than the physician.

What is exploitation? The AMA Judicial Council has cited six examples: (1) steering the patient to a physician-owned pharmacy; (2) refusing patients copies of their prescriptions; (3) prescribing by a code known only to certain pharmacists; (4) abusing or misusing a direct telephone line between the physician and a pharmacy; (5) overprescribing; and (6) using a prescription blank with the name of a pharmacy printed thereon. The AMA Judicial Council has further ruled that a physician-owner may not lease a pharmacy to a pharmacist on a percentage basis because such an arrangement would be a type of fee-splitting. And if the pharmacy is leased for a flat rate, the rental must be roughly equivalent to comparable rentals in the community.

All of this poses an enforcement problem. I sat through Senator Hart's hearings last year, where he tried to equate physician ownership with exploitation, and could find no single instance in the testimony where an abuse could not have been eliminated by a strict enforcement of the AMA rules.

The law permits pharmacists to be exploited. Back in 1928, in the case of Liggett v. Baldridge, the Supreme Court of the United States held that a Pennsylvania statute saying, in effect, that only pharmacists could own drug stores was unconstitutional. The Court's ruling meant—and this, unfortunately, is an actuality rather than a mere possibility—that non-pharmacists can hire pharmacists and can exploit them. Physicians have fought bitterly to preserve their profession from exploitation by hospitals or other third parties, and a vast majority of them are distressed at seeing pharmacists succumbing to similar forces.

But physicians are resentful when pharmacists tell them, in effect, "We know that we can be exploited by chain stores, by cut-rate drug stores and discount houses, but we don't want to be exploited by physicians." The pharmacists thus single out physicians as the "bad guys." It seems unfair that they should use Section 7 of the Principles of Medical Ethics as a club with which to threaten or embarrass physicians, especially when in each instance of an unethical relationship between a doctor and a drug store there is a guilty pharmacist.

Basically, the problem is one of economics and not of medical ethics, and strict enforcement of the "non-exploitation of the patient" rule would eliminate those relatively few instances where the patient is imposed upon or the competing pharmacist is dealt with unfairly. However, the so-called "exploitation of pharmacy" would still remain as an irritant to those pharmacists who oppose physician-ownership under any and all circumstances.

In some degree the problem is geographical. Locations near clinics and hospitals are especially desirable for drug stores, and the situation of the downtown pharmacy can be compared with that of the corner grocery when the supermarkets were started. I am not suggesting that there is no answer, but that the problem is complex and involves much more than medical ethics.

THE PROFESSIONS MUST UNITE TO PRESERVE PROFESSIONALISM

Finally, there is a very serious political problem. Senator Hart and his committee held hearings a year ago on this matter, and the committee has just concluded hearings on the dispensing of eyeglasses. Senator Hart has now filed a bill to curtail physician ownership of pharmacies and physician dispensing of drugs and eyeglasses. His measure may or may not receive Congressional approval, and even if it does, the courts may well declare it unconstitutional. But in any case, the professions—all of them—are in trouble.

There is great doubt, today, as to whether the concept of professionalism will survive, or whether politicians will persuade people that, instead of trusting physicians, pharmacists, lawyers and dentists to do right by them, they rather should trust solely in government, and let government regulate or perhaps take over the professions. If I am right in seeing us at a crossroads in this competition between the professions and government for the trust of the people, it certainly does not behoove medicine and pharmacy to quarrel about whether physicians should own drugstores.

Ethically, it is all right for physicians to do so, provided there is no exploitation of the patient. It is up to the two professions, working together, to find and eliminate the instances of exploitation. Under the present or any easily-foreseeable legal status, the government cannot help, and there is grave danger in asking it to make an attempt at helping. Physicians should bear in mind that their ethics require them to promote the profession of pharmacy. If they remember this, they may very well decide that even though it may be ethical for their clinic to own a pharmacy, it may not be warranted, or may not be prudent, or may not be fair to the pharmacists in the rest of the community.

At the same time, the pharmacy profession can best solve this and many of the other problems which beset it by strengthening its own professionalism. True professional status must be earned —it can neither be accorded nor legislated. There is common cause for cooperation in further developing pharmacy as a profession in the highest sense. Patience, understanding and perseverance will be more effective than derogation, recrimination and iconoclasm.

THE JOURNAL *Book Shelf*

BOOK REVIEWS

NEUROLOGICAL SURGERY OF TRAUMA, ed. by *Colonel John Boyd Coates, Jr.*, MC, U.S.A., and *Arnold M. Meirowsky*, M.D. (Washington, D. C., Office of the Surgeon General, Department of the Army, 1965. $6.25).

Neurosurgery in the Korean War is chronicled in this awkwardly-named volume. Stressing military organization and early definitive surgery, the book is divided into seven parts, including historical notes on military surgery and organizational data, craniocerebral trauma, spinal-cord trauma, post-traumatic spasticity, associated wounds, intervertebral-disc lesions, and peripheral-nerve injuries.

The volume is well documented and well illustrated, and is a lasting contribution to traumatic neurosurgery. The Surgeon General of the U. S. Army and his staff are to be commended for publishing this information. Under the aegis of that office, neurosurgical experiences in both World War II and the Korean War have now been published, at reasonable prices.—*John T. Bakody*, M.D.

MODERN TREATMENT Vol. 2 No. 4, TREATMENT OF DIABETES, ed. by *Thomas F. Frawley*, M.D., and EMERGENCY TREATMENT OF TRAUMA, ed. by *Henry C. Cleveland*, M.D., (New York, Hoeber Medical Division, Harper & Row, Publishers, 1965. $16.00 per year).

The topics covered in this book are diverse, and this review will comment only on the articles concerning diabetes.

The diabetes portion is divided into six sections. The typography is good, each author speaks in easily understandable terms, and at no time does an author go out into left field and leave the reader inundated with graphs, formulas, computations, etc.

The first section, on the treatment of adult diabetes, was written by John W. Runyan, Jr., M.D. He covers the dietary components of diabetes mellitus and also the use of oral hypoglycemics and insulin. I should say that he is acclimated towards NPH insulin, inasmuch as he says, "The vast majority of patients can be controlled with the use of just two insulin preparations, regular and NPH insulin," but he goes into detail concerning the various types of diabetics, and tells how the oral hypoglycemics are used.

D. Laurence Wilson, M.D., in the next section, deals with the treatment of diabetes during pregnancy. He mentions various classifications previously given by Priscilla White as to the prognosis of pregnancy in diabetics, which I believe are very well-founded. In his discussion, however, he mentions that the diabetic should be brought into the hospital during the 28th week of pregnancy, and he says that the consensus of opinion is that the fetal mortality would be lowest if the delivery were accomplished during the 36th or 37th week. That would mean the patient would have to be in the hospital approximately six to seven weeks, and some patients would be very difficult to convince of the necessity for so long a stay.

The next sections, on the treatment of brittle diabetes in children and adults, by Dr. Holbrooke S. Seltzer, M.D., is well written and very useful.

The last two sections are those on the treatment of acidosis, by Thomas F. Frawley, M.D., and on renal disease in diabetics, by John J. Garrett, M.D. Both of these sections are very good.

All in all this is a very well written collection of articles dealing with the treatment of diabetes mellitus. They are easily understood, and, I think for the general practitioner as well as other diabetologists, they comprise a handy compendium.—*Edward J. Hertko*, M.D.

PROGRESS IN NEUROLOGY AND PSYCHIATRY, Vol. 20, ed. by *E. A. Spiegel*, M.D. (New York, Grune & Stratton, Inc., 1965. $17.50).

Some type of abstracting service for the voluminous literature published every year has become necessary, most will agree. This particular volume evaluates contributions in the basic sciences, neurology, neurosurgery, and psychiatry. The evaluation is supplied by 82 contributors. About 6,000 papers were reviewed for the current volume.

Your reviewer purchased and made use of the first volume of this annual review series twenty years ago. He must confess that he has not used subsequent volumes, but the very continued existence of this series is ample proof of its usefulness and popularity. There are certain advantages in having many contributors evaluating the published material, as opposed to relying on a single editor's opinion, as other annual review volumes require.

PROGRESS can be recommended to those involved or interested in the general subject matter of neurology and psychiatry.—*John T. Bakody*, M.D.

OBSTETRICS, THIRTEENTH EDITION, by *J. P. Greenhill*, M.D. (Philadelphia, W. B. Saunders Company, 1965. $20.00).

To review such a standard of obstetric textbooks is quite difficult. This is the 13th edition of a book originated by de Lee 52 years ago.

Dr. Greenhill is perhaps the most well read author of the group who write and edit tomes on obstetrics,

and he calls on his acquired knowledge plus his many authoritative friends to compile and update a vast amount of material on the subject.

The book is organized for ease in study or reference, and suffers very little from multiple authorship and varied writing styles. There are excellent photomicrographs and understandable diagrams to aid and excite the interest of the student.

The only unfavorable comment this reviewer can make is to say that perhaps the text is too lengthy and that some of the "chaff" could be threshed out of the "wheat." However, for the medical student or the practitioner who wants one up-to-date text to which to refer, this book is an excellent choice.—*Claude H. Koons,* M.D.

HANDBOOK OF PHYSICAL MEDICINE AND REHABILITATION, ed. by *Frank H. Krusen,* M.D., *Frederic J. Kottke,* and *Paul M. Ellwood, Jr.,* M.D. (Philadelphia, W. B. Saunders Company, 1965. $16.50).

This "handbook," a 700-page volume, is Dr. Krusen's latest contribution to the literature of physical medicine and rehabilitation. It is a compilation of articles by 25 authors, the majority of whom are physiatrists, on various treatments and technics that are used frequently, and on the conditions and disabilities commonly seen. As his contributors, Dr. Krusen has chosen physiatrists with special interests in certain areas of physical medicine. Of special note are Dr. E. W. Johnson's article on electrodiagnostic methods, and Drs. Lehman and Stilwell's chapters on heat devices such as diathermy, ultra-sound and others, which we use many times a day in a physical medicine department.

Many of the chapters, particularly in the first part of the book, deal with basic topics such as gait-deformities and the functional evaluations of extremities, as well as the various therapeutic modalities commonly used today.

This is a fine book, particularly for the library of a physiatrist, and particularly because of the excellent information regarding the basic technics and modalities used in physical medicine.

Dr. Krusen's associate editors are also well known in this field and have contributed much to the literature in recent years. Dr. Ellwood is executive director of the American Rehabilitation Foundation and also is director of the Kenny Rehabilitation Institute of Minneapolis, while Dr. Kottke is professor and head of the Department of Physical Medicine and Rehabilitation at the University of Minnesota.—*William D. deGravelles, Jr.,* M.D.

BOOKS RECEIVED

PEDIATRIC ELECTROCARDIOGRAPHY, by *Warren G. Guntheroth,* M.D., (Philadelphia, W. B. Saunders, Co., 1965, $7.00).

FOUNDATIONS OF ANESTHESIOLOGY, (Two Volumes), by *Albert Faulconer, Jr.,* M.D., M.S. and *Thomas E. Keys,* A.B., M.A., (Springfield, Illinois, Charles C Thomas, Publisher, 1965, $38.50).

BONE TUMORS, by *Louis Lichtenstein,* M.D., (St. Louis, The C. V. Mosby Company, 1965, $16.75).

RYPINS' MEDICAL LICENSURE EXAMINATIONS, edited by *Arthur W. Wright,* M.D., (Philadelphia, J. B. Lippincott Company, 1965, $12.50).

DISEASES OF THE NEWBORN, by *Alexander J. Schaffer,* M.D., (Philadelphia, W. B. Saunders Company, 1965, $22.00).

INSTITUTE SCENE—Dr. C. V. Edwards, Sr., of Council Bluffs, left, and Dr. W. M. Block, of Cedar Rapids, right, chat with three participants in the recent two-day Institute on Home Care and Management of the Physically-Handicapped Mentally-Retarded, held in Omaha. More than 100 persons, many of them Iowans, attended the meeting. On behalf of the IMS, one of the Institute's co-sponsors, Dr. Edwards expressed a word of welcome to the parents and professional people attending. Dr. Block was one of the Institute panelists, and participated on both days. The Iowa physicians are shown visiting with, from left to right, Mrs. Dean Leonard, of Corning, Mrs. Morris Smith, of Creston, and Mr. Leonard.

Iowa Chapter of the American Academy of General Practice

Annual Scientific Assembly

The Seventeenth Annual Scientific Assembly of the Iowa Chapter of the AAGP was held at the Hotel Savery, in Des Moines, on September 27 and 28. Enthusiasm was evident throughout the entire meeting. With excellent speakers and timely talks, the largest physician audience in recent years received full value.

Dr. Arnold Nielsen, of Ankeny, assumed the presidency of the Chapter. Dr. Raymond Frech, of Newton, was chosen president-elect; Dr. Lee Rosebrook, of Ames, vice-president; and Dr. George A. Kern, Jr., of Des Moines, secretary-treasurer. The two new members elected to the Board of Directors for three-year terms are Dr. Harold Moessner, of Amana, and Dr. William Perrin, of Sumner. Dr. Lewis H. Jacques, of Iowa City, was elected delegate, and Dr. Norman Knosp, of Belle Plaine, was chosen as alternate delegate, each for a two-year term.

Dr. Albert Schweitzer lived again for all through a presentation by Dr. Dale Weber, of Clinton, a member of the Academy, which included beautiful slides.

The annual banquet was climaxed by the fine entertainment of Des Moines' own Broadway star, Miss Karen Morrow, and the spellbinding ventriloquist Wayne Roland.

The reward for attending each day's session was not only medical knowledge but also a chance to win a TV set! The two TV's were won by Dr. George Paschal, of Webster City, and Dr. Billy England, of Griswold.

Vitamin Sales Promotion Discontinued

Alert physicians and prompt action by the Iowa Medical Society and the AMA resulted in the discontinuation of a vitamin sales promotion operating out of Lathrop, Missouri. Follow-up action was taken by the Polk County Medical Society, and the Better Business Bureaus of Des Moines and Kansas City, none of which had been aware of the activity. Later information revealed that The Registry, Inc. is operated by an osteopath who is not a member of the Missouri Osteopathic Society, and that his scheme was unknown to the medical society in his area. The firm offered physicians a kick-back of $2 per order on vitamins that they might buy for their patients.

Following a letter from Mr. Doyl Taylor, acting director of the AMA Department of Medical Ethics, the firm said it was discontinuing its offer.

Section 7 of the Principles of Medical Ethics, as interpreted in AMA JUDICIAL COUNCIL OPINIONS AND REPORTS, 1964, states that "the doctor may receive no profit whatever from his patient other than payment for rendered medical services. Hence it should be apparent that no rebate of any kind, in any form or from any source can be accepted."

For further observations regarding Section 7 of the Principles of Medical Ethics, as it relates to pharmacy and pharmacists, physicians are urged to read the article by Mr. Robert B. Throckmorton on the "green sheet" in this issue of the JOURNAL.

Lederle Symposium in Des Moines

At the Hotel Savery in Des Moines on Wednesday, November 10, the Iowa Chapter of the AAGP in cooperation with Lederle Laboratories will present a one-day Symposium on Pediatric Problems.

10:00 a.m. "Early Diagnosis of Schizophrenia"—William Voorhees, Jr., M.D., Northern State Hospital, Sedro Woolley, Washington.

10:40 a.m. "Common Anemias in Infancy and Childhood"—Anthony V. Pisciotta, M.D., Marquette University School of Medicine, Milwaukee.

11:20 a.m. QUESTIONS AND PANEL DISCUSSION

12:15 p.m. LUNCHEON FOR ALL PHYSICIANS AND THEIR WIVES
Speaker: John G. Young, M.D., Dallas: "Emotional Problems in Children and Teenagers"

2:15 p.m. "Antibiotics in Pediatrics"—Erwin Neter, M.D., State Univ. of New York School of Medicine, Buffalo.

2:55 p.m. "Pediatric Surgery"—Philip Thorek, M.D., Cook County Graduate School of Medicine, Chicago.

3:50 p.m. QUESTIONS AND PANEL DISCUSSION

4:45 p.m. RECEPTION FOR ALL

Wives of Physicians are welcome and encouraged to attend. At 2:15 there will be a special program for the wives, with Mr. Phillip Lane, of Des Moines, speaking on interior decorating. There is no fee for any of the program, including the luncheon and reception.

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., COMMISSIONER

Common Poisonous Plants*

Plant	Toxic Part	Symptoms
HOUSE PLANTS		
Hyacinth, Narcissus, Daffodil	Bulbs	Nausea, vomiting, diarrhea. May be fatal.
Oleander	Leaves, Branches	Extremely poisonous. Affects the heart, produces severe digestive upset and has caused death.
Poinsettia	Leaves	Fatal. One leaf can kill a child.
Dieffenbachia (Dumb cane) Elephant ear	All parts	Intense burning and irritation of the mouth and tongue. Death can occur if base of the tongue swells enough to block the air passage of the throat.
Rosary pea, Castor bean	Seeds	Fatal. A single rosary pea seed has caused death. One or two castor bean seeds are near the lethal dose for adults.
Mistletoe	Berries	Fatal. Both children and adults have died from eating the berries.
FLOWER GARDEN PLANTS		
Larkspur	Young plant, Seeds	Digestive upset, nervous excitement, depression. May be fatal.
Monkshood	Fleshy roots	Digestive upset and nervous excitement.
Autumn crocus, Star-of-Bethlehem	Bulbs	Vomiting and nervous excitement.
Lily-of-the-Valley	Leaves, Flowers	Irregular heart beat and pulse, usually accompanied by digestive upset and mental confusion.
Iris	Underground stems	Severe, but not usually serious, digestive upset.
Foxglove	Leaves	One of the sources of the drug digitalis, used to stimulate the heart. In large amounts, the active principles cause dangerously irregular heartbeat and pulse, usually digestive upset and mental confusion. May be fatal.
Bleeding heart (Dutchman's breeches)	Foliage, Roots	May be poisonous in large amounts. Has proved fatal to cattle.
VEGETABLE GARDEN PLANTS		
Rhubarb	Leaf blade	Fatal. Large amounts of raw or cooked leaves can cause convulsions, coma, followed rapidly by death.
ORNAMENTAL PLANTS		
Daphne	Berries	Fatal. A few berries can kill a child.
Wisteria	Seeds, Pods	Mild to severe digestive upset. Many children are poisoned by this plant.
Golden chain	Bean-like capsules in which the seeds are suspended	Severe poisoning. Excitement, staggering, convulsions and coma. May be fatal.
Laurels, Rhododendron, Azaleas	All parts	Fatal. Produces nausea and vomiting, depression, difficult breathing, prostration and coma.
Jessamine	Berries	Fatal. Digestive disturbance and nervous symptoms.
Lantana camara (red sage)	Green berries	Fatal. Affects lungs, kidneys, heart and nervous system. Grows in the southern U. S. and in moderate climates.
Yew	Berries, Foliage	Fatal. Foliage more toxic than berries. Death is usually sudden without warning symptoms.
TREES AND SHRUBS		
Wild and cultivated cherries	Twigs, Foliage	Fatal. Contains a compound that releases cyanide when eaten. Gasping, excitement, and prostration are common symptoms that often appear within minutes.

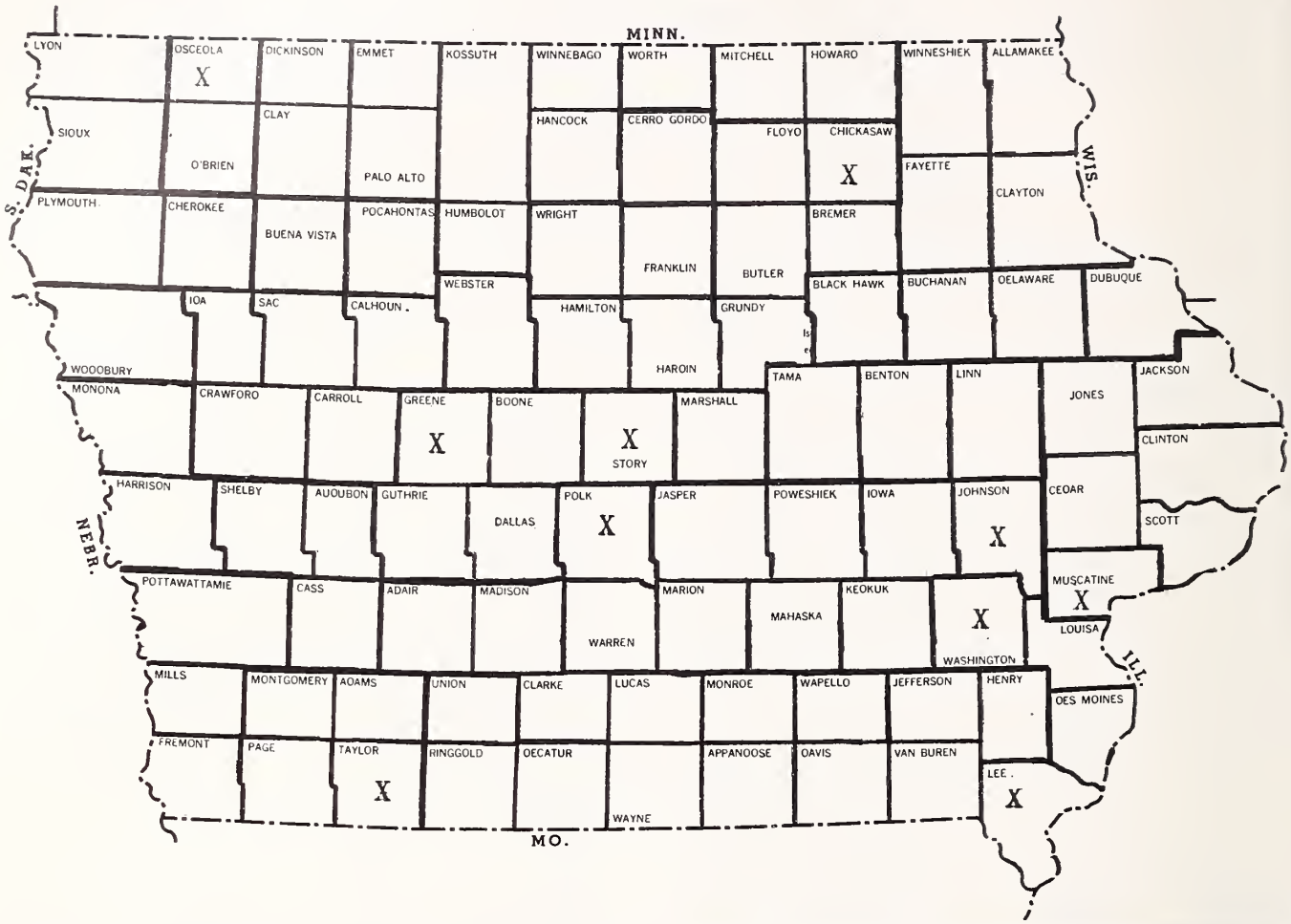
* SOURCE: Family Safety Magazine, Summer 1964, page 4, published by the National Safety Council, 425 N. Michigan Avenue, Chicago, Illinois.

Plant	Toxic Part	Symptoms
Oaks	Foliage, Acorns	Affects kidneys gradually. Symptoms appear only after several days or weeks. Takes a large amount for poisoning. Children should not be allowed to chew on acorns.
Elderberry	All parts, especially roots	Children have been poisoned by using pieces of the pithy stems for blowguns. Nausea and digestive upset.
Black locust	Bark, Sprouts, Foliage	Children have suffered nausea, weakness and depression after chewing the bark and seeds.
PLANTS IN WOODED AREAS		
Jack-in-the-Pulpit	All parts, especially roots	Like dumb cane, contains small needle-like crystals of calcium oxalate that cause intense irritation and burning of the mouth and tongue.
Moonseed	Berries	Blue, purple color, resembling wild grapes. Contains a single seed. (True wild grapes contain several small seeds.) May be fatal.
Mayapple	Apple, Foliage, Roots	Contains at least 16 active toxic principles, primarily in the roots. Children often eat the apple with no ill effects, but several apples may cause diarrhea.
PLANTS IN SWAMP OR MOIST AREAS		
Water hemlock	All parts	Fatal. Violent and painful convulsions. A number of people have died from hemlock.
PLANTS IN FIELDS		
Buttercups	All parts	Irritant juices may severely injure the digestive system.
Nightshade	All parts, especially the unripe berry	Fatal. Intense digestive disturbances and nervous symptoms.
Poison hemlock	All parts	Fatal. Resembles a large wild carrot. Used in ancient Greece to kill condemned prisoners.
Jimson weed (thorn apple)	All parts	Abnormal thirst, distorted sight, delirium, incoherence and coma. Common cause of poisoning. Has proved fatal.

Morbidity Report for Month of September, 1965

Diseases	1965 Sept.	1965 Aug.	1964 Sept.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	117	83	108	Hancock, Jackson, Jefferson, Johnson, Polk
Typhoid fever	0	1	0	
Smallpox	0	0	0	
Measles	14	32	13	Hamilton, Polk, Scott
Whooping cough	5	1	15	Scott
Brucellosis	6	10	3	Dubuque
Chickenpox	32	10	19	Dubuque
Meningococcal meningitis	2	0	0	Hardin, Iowa
Mumps	30	19	58	Des Moines, Polk, Scott
Poliomyelitis	2	0	0	Palo Alto, Webster (delayed reports)
Infectious hepatitis	18	40	26	Clay, Crawford, Des Moines, Dubuque
Rabies in animals	15	14	24	Keokuk
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	25	20	17	For the state
Syphilis	54	50	76	For the state
Gonorrhea	204	184	160	For the state
Histoplasmosis	3	2	1	Bremer, Butler, Polk
Food intoxication	6	1	0	Franklin
Meningitis (type unspecified)	2	2	4	Chickasaw, Madison
Diphtheria carrier	0	0	0	
Aseptic meningitis	5	5	0	Polk
Salmonellosis	13	11	8	Johnson, Linn, Polk
Tetanus	1	2	2	Iowa
Chancroid	0	0	0	
Encephalitis (type unspecified)	2	0	3	Black Hawk, Clinton
H. influenzal meningitis	1	2	1	Johnson
Amebiasis	1	1	0	Boone
Shigellosis	2	3	1	Mahaska, Wapello
Influenza	0	0	3	

Bat Rabies



The recent incident in which the news media provided an important public health service in helping to locate a vacationing Iowa woman who had been bitten by a rabid bat, focuses attention on the fact that bats can and sometimes do have rabies. In this instance rabies was not suspected at the time of the bite. When the bat died several days later, it was sent to the laboratory for examination and found positive for rabies. In the meantime the bite victim had departed on a vacation. It was necessary to locate the victim so that anti-rabies preventive treatment could be started without additional delay.

The reported cases* of rabies in bats in Iowa are summarized in the table above. The first report was from Osceola County in August, 1960. Since then, rabid bats have been reported from nine additional counties. The geographic distribution suggests that rabid bats are likely to be found in any county in the state. Rabies-infected bats have also been reported from neighboring states.

Most of these reported cases occurred in the late summer or early fall, with five of the 13 cases in September. Since rabies is not related to the season, this distribution of cases perhaps is related to the seasonal movement of the bats.

* Confirmed and reported by the Iowa Veterinary Medical Diagnostic Laboratory or the State Hygienic Laboratory.

County	Year	Month	Species of Bat*	Persons Bitten
Osceola	1960	August	Lasiurus cinereus (hoary)	1
Greene	1960	September	?	1
Washington	1961	October	Eptesicus fuscus (big brown)	1
Story	1961	November	Eptesicus fuscus (big brown)	
Chickasaw	1962	July	Eptesicus fuscus (big brown)	1
Story	1962	September	Lasiurus cinereus (hoary)	
Story	1963	September	?	
Polk	1963	September	?	
Polk	1965	June	Lasiurus cinereus (hoary)	
Johnson	1965	August	Eptesicus fuscus (big brown)	
Muscatine	1965	July	?	
Lee	1965	August	?	1
Taylor	1965	September	Lasiurus cinereus (hoary)	1

* Identification by State Hygienic Laboratory, Veterinary Medical Diagnostic Laboratory, R. B. Moorman, Ph.D., A. O. Haugan, Ph.D., and Joe Murphy.

In most instances these rabid bats have acted strangely. Several of them have been found on the ground, apparently sick or paralyzed. One boy was bitten as he removed leaves from a waterspout in which the bat was hidden. A group of boys on a playground said a bat was flying erratically and "dive-bombed" them. It was knocked down and a boy was bitten as he tried to pick it up.

Six persons are known to have been bitten by these rabid bats and have received or are in the process of receiving anti-rabies preventive treatment. All have remained well.

All wild animals including bats should be avoided if at all possible. Rabies has been reported in Iowa in badgers, striped and spotted skunks, coyotes, foxes, gophers, ground hogs, mink, raccoons, squirrels and other wild animals, as well as in bats and many species of domestic animals. It is unnatural for wild animals to appear to be tame. These "tame" or strange-acting wild animals especially should be avoided, since they may have rabies.

Pesticide-Contaminated Wells

Well water contaminated by farm chemical pesticides has been found in certain parts of Iowa, according to Robert L. Morris, Ph.D., assistant professor of preventive medicine and environmental health at the U. of I. and assistant director of the State Hygienic Laboratory. Chlorinated hydrocarbons have seeped through the soil and have reached shallow ground-water supplies. He said that sufficient evidence is not available to determine whether there is a definite health hazard in these instances. Water supplies under sandy soils that are low in organic content are particularly vulnerable.

The discovery was incidental to a study under way at the University to determine the amounts of these chemicals in birds, fish and other wild life, a project supported by a $10,000 grant from the State Conservation Commission.

Thus far, the investigation has not revealed as high a pesticide concentration as had been anticipated in Iowa rivers. Tests have been made at six sampling stations along the Mississippi, Iowa, Cedar, Raccoon and Missouri, and others will be made on several of the smaller streams. In the latter, Dr. Morris expects to find greater contaminations because there is less water in them, and thus less dilution can be anticipated. He emphasized that careful use of pesticides appears not to produce high contamination in surface waters such as rivers, lakes and streams.

A cooperative educational program on the proper use of these chemicals is being established by the Institute of Agricultural Medicine at the U. of I., the State Department of Health, and Iowa State University.

International Poliomyelitis Report*

An epidemic of poliomyelitis in Blackburn, Lancashire, England and certain smaller contiguous communities has given rise to 50 cases. Of these, 24 have been classified as paralytic. The date of onset of the first case was June 28; the onset date of the last case reported in this series is not known, but laboratory confirmation was given on September 1. Type I poliovirus has been recovered from each of the 50 patients, all of whom were either unvaccinated or inadequately vaccinated.

The first seven patients were under 20 years of age and have a persistent paralysis; the remaining 43 patients were all adults, 17 of whom were reported to have varying degrees of paralysis.

The earliest cases occurred in a small community within Blackburn itself. Four days after laboratory confirmation of a Type I poliovirus infection had been received, a mass immunization program using trivalent oral poliomyelitis vaccine was undertaken in this community. Later, as cases were being confirmed elsewhere in Blackburn, a mass program for the whole city was carried out over four days.

In two communities contiguous to Blackburn where single cases of poliomyelitis had occurred, vaccination programs were also undertaken.

* U. S. Public Health Service, MORBIDITY AND MORTALITY WEEKLY REPORT, September 18, 1965.

AVAILABLE FROM THE STATE DEPARTMENT OF HEALTH

For venereal disease control
- Procaine penicillin (aqueous or oil suspension)
- Benzathine penicillin G (Bicillin)
- Achromycin (250 mg. capsules)

Immunizing agents
- Triple toxoid
- Diphtheria-tetanus toxoid (Combined, absorbed or precipitated—Adult type)
- Salk and Sabin poliomyelitis vaccines
- Typhoid vaccine triple (Typhoid, para A and para B)
- Smallpox vaccine

Rabies control materials
- Duck embryo anti-rabies vaccine
- Anti-rabies serum

Histoplasmin

Snake anti-venom (kept at poison center and sub-centers)

Gamma globulin (for protection of people exposed to measles, German measles, or infectious hepatitis, if the risk is sufficiently great)

For detailed information, see the April, 1965, JOURNAL, *pages 225-227, or telephone the Department.*

Iowa Association of Medical Assistants

More Terminology

Last month we presented a rather sketchy background of medical terminology and we will continue on the same subject this month but from another angle.

In studying terminology we suggest the following general categories:

1. Abbreviations frequently used, prefixes and suffixes.
2. Terms relative to anatomy.
3. Terms relative to diagnosis.
4. Terms relative to symptoms.
5. Terms relative to surgical procedures.
6. Terms used in x-ray and laboratory procedures.

A knowledge of anatomical terms is essential if the medical assistant is to understand terminology. Most medical-office libraries contain at least one textbook on anatomy. Your physician-employer will encourage your use of such a text to increase your knowledge, and subsequently to increase your efficiency. In addition to the texts suggested last month, we recommend UNDERSTANDING MEDICAL TERMINOLOGY by Sister Agnes Clare, S.S.M., published by Catholic Hospital Association, 1958; and DYNAMIC ANATOMY AND PHYSIOLOGY by Langley, Cheraskin and Sleeper, second edition, published by Blakiston (McGraw-Hill), 1963.

We suggest a test of your present knowledge. Then you can be the judge of whether or not you need further study. The following questions were taken from material published in the AAMA BULLETIN beginning with the July-August, 1964, issue, and written by Miss Lois Pluckhan, a member of the AAMA Education Committee.

1. What is another name for biliary calculi, and give the term for their removal from the common bile duct?
2. Name the three parts of the small intestine.
3. What does h.s. stand for?
4. Achlorhydria means excessive hydrochloric acid. True or false?
5. What is a spontaneous pneumothorax?
6. What is Cheyne-Stokes respiration?
7. What is the surgical procedure done to tap the pleural cavity for removal of fluid?
8. Distinguish between apnea, dyspnea and orthopnea.
9. NPH and PZI refer to what medication?
10. What is polyphagia? Polydipsia?
11. What is Graves' disease? Give two other terms.
12. What condition is caused by an abnormal increase of uric acid in the blood?
13. Oversecretion of pituitary growth hormone causes what disease?
14. What are tophi?
15. What does CBC mean?
16. What is the medical term for malignant lymph tissue?
17. Locate the spleen and explain its function.
18. What is the function of platelets?
19. Name three types of white blood cells.
20. What is enuresis?
21. Distinguish between pyuria, hematuria and glycosuria.
22. What is a cystogram?
23. Name the surgical procedure for incision into the bladder for removal of stones.
24. What specific tests are included in a routine urinalysis?
25. What are O.D., O.S., and O.U.?
26. What is a celia?
27. What is keratitis? Iritis?
28. Distinguish between endocardium, pericardium and myocardium.
29. What is the difference between auricular and ventricular fibrillation?
30. The terms D&C, LMP, OB, and PID are more commonly used in which speciality?
31. Where is amniotic fluid found?
32. T&A refers to what surgical procedures?
33. What is epistaxis?
34. What is meant by saying a woman is gravida II, para I?
35. A "Pap" smear is what diagnostic procedure?
36. What is the difference between smooth and striated muscles?
37. What is ankylosis?
38. What is the difference between arthritis and fibrositis?
39. What is a myringotomy?
40. Differentiate between aphagia and dysphagia.

Those of you who have had formal nurse or technician training should score well on this test; the medical assistant with several years of medical office experience should also be able to answer most of the questions; the new medical assistant will find the test quite a challenge.

HELEN G. HUGHES

Woman's Auxiliary News

Thanksgiving Day

By DONALD LAVERNE WALKER

The laughter in the kitchen where
They're baking pumpkin pie,
The smell of turkey in the air,
The bleak November sky,
The snowflakes on their playful way
To cold and barren ground,
Remind us that Thanksgiving Day
Again has rolled around.

As we await the dinner bell
And merriment so gay,
Let us recall for just a spell
The first Thanksgiving Day.
Let's live again the Pilgrim way,
Bear hardships that they bore;
How meager were the blessings they
Thanked the Almighty for.

They knew no ease or comfort then;
Behind trees death would lurk;
Yet fair young women and their men
Walked bravely to the kirk.
In thanks to God their prayers would rise
For blessings of their day—
Within themselves their conscience cried,
"You'd better kneel and pray!"

We squirm a bit, quite ill at ease
In our soft and comfy chair,
As once again our fancy sees
What Pilgrims had to bear.
Then as we count our blessings, too,
Strewn as the summer flowers,
We kneel and say, "O God, thank You
For blessings that are ours.

"Forgive us, God, and may we grow
In faith that we might see
That all the blessings we can know
Could only come from Thee;
And help us value Thy great love
Along our pilgrim way.
May each dawn be the starting of
A new Thanksgiving Day."

The Medical Auxiliary and Public Service

Our Goal: To maintain and develop the prestige and esteem of the medical profession in the eyes of the public, and to extend the aims of the medical profession to all organizations which look to the advancement of health and health education by assuming community leadership and service in the field of health and community activities.

Our Inheritance: When physicians accept their degrees as doctors of medicine, they automatically become the recipients of a very old and valuable inheritance of medical traditions and ethics. Recognized as paramount in that inheritance has always been the serious responsibility to maintain the standards of medical education and service to patients on the highest possible level and to further the service of medicine as far as it is possible to carry it in one generation. At the center of the American Heritage is the true individual.

In recent years, changing circumstances have caused the busy physician to recognize and realize his civic responsibility outside of his Hippocratic Oath, and today every medical society urges its individual members as a necessity for "A Better World" and a sound public relations program to accept responsibility for activating and sharing in community service programs.

Auxiliaries, too, must broaden their activities and accept equal responsibilities with medical societies in the field of community or public service. As doctors' wives, we assume these responsibilities with our marriage vows, and it is not a choice of whether we will or will not take part in the affairs of the profession. Our participation is essential, for we must fulfil these responsibilities or fail in our role as wives of physicians. Our service is a con-

AMA-ERF CHRISTMAS CARDS

Portfolio of sample cards now available from your county AMA-ERF chairman, or from Mrs. R. H. Wicks, state AMA-ERF chairman, 204 South Story Street, Boone 50036.

tinuous personal responsibility and not one we can expect someone else to do for us.

FUNDAMENTALS OF A GOOD PUBLIC SERVICE PROGRAM

First Step—Informed Membership. It is a fundamental truism that in order to solve a problem we must not only recognize and know the problem but must learn the various steps and kind of action necessary for its solution. In order to act as an interpreter for the medical profession, we must necessarily know the problems confronting the profession and the solutions offered by the profession. Therefore, complete and thorough self-education is the first essential in facing and solving our problems.

Second Step—Contacts. Every doctor's wife has contacts with other organizations which can and should provide her with valuable avenues for furthering good public relations. Auxiliary members as individuals participate in educational, civic and religious groups, and in numerous health organizations. Auxiliary members have many daily contacts with community leaders. In the "extremely valuable" category are the contacts with public officials, educational personnel, leaders of civic, religious, patriotic, labor and farm organizations, and philanthropic and character-building agencies. All of these relationships must be enlarged and extended. Through them, our efforts can be multiplied a hundredfold, and without them, progress will be almost imperceptible.

Third Step—Service. In order to develop good public relations every Auxiliary must be a public-service organization. Only through this medium can we hope to achieve our ultimate goal. Paramount, of course, must always be the question, "What can we do that will be of most service to our community in the field of health?"

Auxiliaries could and should utilize the work and enthusiasm of every doctor's wife in every organization and community project, in which she as an individual participates, and thus make the work and accomplishments of every doctor's wife, in every field of endeavor, pay dividends to the professional family, to the Auxiliary and to mankind. Public relations has been defined as doing good. It will bring its own reward to us and the great humanitarian profession of medicine.

Every Auxiliary, by careful inventory and planning, could serve through its membership as a clearing house for community service. A check or report of the activities of individual members would provide enlightenment concerning many community projects and could furnish valuable resources and support for those activities and projects needing and deserving additional attention. In this manner Auxiliaries could very shortly develop a reputation as service organizations, from which other community service organizations would always find assistance for needed community projects and action. In this way the Medical Association's family would gain the complete confidence of the community, and assume leadership and get recognition for activities in the field of health and health education.

Only by a sincere interest and participation in all civic problems affecting the community can we expect to assume our proper role in the field of health and leadership. By doing what any good citizen or neighbor could and should do, we will meet our inherited and acquired responsibility "For a Better World."

Public service is everybody's business, and the obligation is ours.

News From Around the Hawkeye State

Clay County

The Clay County Medical Auxiliary, assisted by Palo Alto, Dickinson, and Emmet, plus many volunteers, managed the Homebound Handcraft Sales at the Clay County Fair and had the largest proceeds to date—$1,591.30. Mrs. Frank Edington was organizational chairman, and the new craft director for the Iowa Society for Crippled Children and Adults, Mr. Fred Kelly, was at the Fair all week. He explained the purpose of his organization to those attending.

MRS. FRANK EDINGTON, *President*

Dubuque County

The first meeting of the Dubuque County Medical Auxiliary was held Tuesday night, September 14, at the Dubuque Golf and Country Club. The dates of October 28-30 were decided upon for the Iowa Handicapped sale to be held at Roshek's Department Store.

MRS. NEWTON CHUN, *Publicity Chairman*

Marion County

The Marion County Medical Auxiliary met at the Maple Buffet September 28 for a dessert luncheon and business meeting, with Mrs. T. I. Clark and Mrs. F. P. Ralston as co-hostesses. Thirteen members and three guests were present. The president, Mrs. Robert McClung, presided over the meeting. Plans were completed for the showing of the film of the first voyage of the "Good Ship Hope." The film will be shown, free of charge, at the Grand Theatre, October 12 at 2 p.m. and at the Veterans Administration Hospital October 8.

The Auxiliary members voted to furnish the cookies for the Marion County Home and Farm Open House. An invitation to hold the October meeting at the home of Mrs. Clara Nicholson, Des Moines, was received. It was voted by the members present to change the Auxiliary meeting date to the fourth Monday of each month.

MRS. A. P. SMITH, *Publicity Chairman*

"Open your eyes and look for some man, or some work for the sake of men, which needs a little time, a little friendliness, a little sympathy, a little human toil. See if there is not some place where you may invest your humanity."

—Dr. Albert Schweitzer

Cost of Illness—What's That?

(The following is taken from the CONNECTICUT QUARTERLY, *which is published by the Woman's Auxiliary to the Connecticut State Medical Society.)*

You can have a life-saving tracheotomy for the same price you pay a plumber to install and connect a dishwasher.

This point was made by a physician's wife during a discussion of the cost of medical care at the convention of the Woman's Auxiliary to the American Medical Association, held in New York June 20-24.

Mrs. Joseph A. Leonard, national legislation chairman, said that a plumber's hourly wage has increased 346 per cent in the last 20 years, while the cost of a doctor's services has gone up only 112 per cent in the last 30 years. "In the same period," she said, "cleaning women's wages jumped 353 per cent, and the price of a haircut increased 300 per cent."

Even though physicians' charges have increased, today the doctor receives only 25 per cent of the health-care dollar," she said. "Twenty years ago, his services accounted for 30 per cent."

Other physicians' wives on the panel, "The Cost of Illness—What's That?" made these points:

Mrs. Norman H. Gardner, national program chairman—"It takes only 24 minutes of the average working man's time to pay his health-care bill every year. So many people who complain about the cost of care don't realize it is operating in today's economy—not yesterday's. While Americans spent $23.6 billion for such care in 1963, that represented only 6.3 per cent of their spending for personal needs. More than 75 per cent of all Americans are enrolled in some prepayment plan. The cost of health insurance has risen over the past 20 years, partly because the cost of illness has increased, but more because better medical care is offered today."

Mrs. Stanley Peterson, regional program chairman—"If your hospital stay now is shorter than it was 20 years ago but your bill is higher, credit for both goes to the payroll explosion. Now, labor cost represents nearly two-thirds of a hospital's total expenses. Wages are only a part of it. During the past 20 years, laboratory use has increased 96 per cent; x-ray diagnosis and therapy 179 per cent; and use of drugs 56 per cent."

Mrs. Clifford Harwood, regional legislation chairman—"Less than a penny of each dollar the average American spends goes for prescription drugs. This means he spends less for drugs than for recreation, and less than one-fourth as much as he spends for tobacco and liquor."

Getting Acquainted With . . .

Editor's Note: For the sake of consistency, all of these sketches probably should be either biographical or autobiographical. But some of them came to us as self-portraits, and much of their charm is implicit in the ladies' self-characterization. Thus, away with consistency!

Mrs. F. D. Edington, Spencer, Iowa

Clay County President

Born Mary E. Reid in Red Wing, Minnesota, and later adopted by an uncle, Mrs. Edington was brought up on Army posts. She attended public schools up to grade six, and private schools from there on. She studied two years at college—private painting, art study, floral art—and she is a professional designer and homemaker.

The Edingtons have one son, who graduated from the University of South Dakota in 1962 and married in 1965.

Mrs. Edington has enjoyed an active athletic life of riding, swimming, golf, etc. Most of her youth was spent in Texas at various cavalry posts.

In 1935, when she and Dr. Edington were married, he was a lieutenant in the Medical Corps, at Fort Des Moines, Iowa. They lived in Spencer from 1937 to 1941, when the doctor was ordered once more to active duty. From 1941 to 1946 they lived on various Army Air Force bases. Her husband was the youngest colonel in the medics, a fact which helped to give them an interesting and challenging life. After the war, because of deep roots in Iowa, they returned.

Among the activities that Mary enjoys are Women's Club, PTA, Church, Cub Scouts and Bandmothers, Garden Club, Golf and Country Club and Medical Auxiliary. Because of a recent illness, her life has been much changed of late. She now fishes, paints and plays a bit of bridge, as well as working as a hospital volunteer.

Mrs. J. L. Ptacek, 1518 Willson Avenue, Webster City, Iowa

Hamilton County President

Graduate of Rockford College. Worked in Cleveland, Ohio, and attended Western Reserve University while obtaining a master's degree in case work. Married a graduate of Western Reserve Medical School.

Our family spent four "challenging" years cop-

ing with World War II. In January, 1946, we were reunited and resumed our activities in Webster City.

Our two sons are attending professional schools at present (law and medicine). Our daughter is a junior in high school. Educational problems in general, including our local community college, mental health problems, the Congregational Church, Boy Scouts and Girl Scouts, and the United Fund are the main interests with which we try to fill our spare time.

In Medical Auxiliary work I have been quite interested in health-careers recruitment and in promoting volunteer work for nursing-home and county-home patients. While openly wishing there were more doctors in the county to carry on the medical work, I have secretly wished that there were more doctors' wives to pursue the many projects that are promoted by the Medical Auxiliary.

Mrs. G. E. Egli, 1003 East Adams Street, Fairfield, Iowa

Jefferson County President

I was born in Starkville, Mississippi, attended David Lipscomb College, in Nashville, Tennessee, and graduated from Mississippi State University with a B.S. degree in animal husbandry. It was there that I met my husband (he was my professor), and we were married in 1954.

After our first child was born, my husband entered medical school in Jackson, Mississippi, and we lived there for the next four years. Our next year was spent in Iowa City, where he interned. By that time we had three girls, and our fourth was born in Fairfield, where we now live.

We are members of the Church of Christ and are active in the church at Ottumwa. In addition to the Medical Auxiliary, I am a member of Hospital Auxiliary, Parsons College Auxiliary and PTA, and I am city chairman of the TB Association's Christmas Seal Drive. I spend any spare time sewing almost all the clothes for my four daughters, aged four, five, eight and nine.

Mrs. W. J. Tegler, 18 Norwood Circle, Iowa City

Johnson County President

LaVonne Tegler was born in Iowa in 1928, and attended the University of Iowa from 1946 to 1948. While there, she was a Scottish Highlander. She was married in 1950 to Dr. Wayne J. Tegler, who is in general practice in Iowa City.

She is a member of Mercy Hospital Guild, Mercy Hospital Staff Auxiliary, Johnson County Auxiliary, Pan-American League, Iowa City Community Theatre and Music Study Club. In the line of interests and hobbies, she enjoys golf, music (piano and organ), bridge, riding and ice skating, and she has just begun flying lessons.

Mrs. Robert McClung, 717 East Montgomery Street, Knoxville

Marion County President

Her growing-up years were spent in a farming community at Marathon, Iowa. She attended Buena Vista College and the State College of Iowa, and became an elementary-school teacher. She and her husband were married in 1955, prior to his entering medical school at the University of Iowa. The year of his internship, at Broadlawns Hospital, they spent in Des Moines. From there, they journeyed to sunny Florida, where Dr. McClung spent 2½ years as a Navy flight surgeon, in Pensacola. In 1962 he settled into general practice at the (Mater) Clinic in Knoxville, with a group of three other physicians. The McClungs have three children: Mary Jane, 6; Kendall Kay, 5; and Timothy, 1. Janet likes to read, attempts to play golf, and frequently has "coffee" with her friends.

Mrs. B. L. Basinger, Goldfield

Wright County President

Mrs. Basinger was born in Pulaski, Davis County, Iowa, in 1901. She attended Pulaski High School, graduating in 1918, and then Bluffton College, Bluffton, Ohio. She later taught school (domestic science), and married her college boyfriend in 1923. As a bonus, she now has two sons, two wonderful daughters-in-law, four granddaughters and two grandsons.

In addition to caring for her 89-year-old mother, she is active in Sunday School and women's work in the U.P. Church in Goldfield. She is a member of the Bay View Federation Club, plays bridge, enjoys reading and enjoys "coffee" with friends.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

President-Elect—Mrs. S. M. Korson, Box 111, Independence 50644

Recording Secretary—Mrs. L. H. Prewitt, 33 Birchwood Hills, Ottumwa 52501

Corresponding Secretary—Mrs. H. C. Leiter, 2400 E. Solway, Sioux City 51104

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Veverka, Prairie City 50228

Co-Editor—Mrs. R. R. Carlson, 826 Sherman Drive, Ankeny 50021

Philosophy and Medicine: A Common Ground

NEAL W. KLAUSNER, Ph.D.
Grinnell

I AM FREQUENTLY and I suppose justifiably called "Doctor," but I think I can truthfully say I have never felt so out of place as I do in addressing the members of the Iowa Medical Society. One of my major interests for over a quarter of a century has been the "brains" of a certain class of afflicted human beings called students, but that occupation hardly qualifies me as a brain surgeon except in a purely metaphorical sense. It is an elementary but important point in logic that although all physicians are doctors, certainly not all doctors are physicians.

THE ROLE OF THE PHILOSOPHER

Therefore, I speak to you only as a philosopher and as one who has a normal claim upon your services. The latter justification needs no explanation; the former does. Who is a philosopher, and what conceivable reason can he have for addressing physicians? Apart from my peculiar physical distresses, which might interest you, what can you and I possibly have in common? Are not our purposes and methods so remote and unlike that it is absurd for me to try to bring together what others have wisely kept asunder?

Let me go to the first question. Here I prefer to speak for myself, rather than for the tribe. There are some who would accept the label "philosopher," but not my definition. That, however, is not unfortunate. Disagreement among philosophers is not as perilous as disagreement among physicians. Indeed in philosophy, to differ is frequently a sign of vitality, but in medicine it might be a sign of doom and a reason for dismay, at least for the patient. Straightforwardly, then, a philosopher is a thinker who is never wholly *with* anyone —neither *with* a man, a nation, an institution or a god. He maintains a critical distance from every claim made upon him. He always has an afterthought. He may vigorously defend a position in politics, science, art or religion; he may be stubbornly convinced of the errors of an opponent; he may exhibit a passionate loyalty to "the truth" and a militant opposition to what he believes is false. But he must endure the persistent small voice that often distracts him by saying, at the most critical times, "You could be wrong. Why not look at it this way?"

Thus, there is something impertinent about a philosopher. He demands the right to differ, to dissent and to criticize—not just to be different, but to be different for a nobler end. What is that end? It is the triumph of reason over unreason, a victory achieved not by force but by persuasion, where ideas are refined in the context of a dialogue.

But it is something else also. Philosophy is man's most thoroughgoing effort to "tell the whole story." The sciences do not do it, nor do they try; nor does religion, or history, or art. Each of these has its fairly well staked-out interests; each has its restricted partisan loyalties. Philosophers, of course *never succeed* in telling the whole story, for the will is weak, time is short and the plot is enormously detailed. Thus in one sense there can be no successful philosophy. All must fail because of incompleteness and human fallibility. But such a consequence does not deter the philosopher, for he is not a man trying to become a god, but a man trying to become himself—that is, to discover his possibilities and his limitations.

The philosopher differs from those who hold to orthodox religious beliefs. He does not have the privilege of escape into a "faith" as a refuge from dialectic, or an excuse for failing to ask the next question. Come enjoyment or pain, come good or evil, for the philosopher there is always another inquiry and there is seldom a final answer. The first words have been said in philosophy, but not the last. The philosopher is not the man to issue communiques or directives or prescriptions. He may, however, issue "reminders."

"THE PROPER STUDY" OF PHILOSOPHERS AND PHYSICIANS

And now to the second point. What do philosophers and physicians have in common? Is there a meeting-place for diagnosis and dialectic? Here

---

Dr. Klausner is F. Wendell Miller professor of philosophy at Grinnell College. He gave this address at the April, 1965, meeting of the Iowa Medical Society, in Des Moines.

there is a temptation to turn to history and to show the once close relationship between philosophy and medicine. But I shall resist the temptation, and only remind you of the words of the early Greek philosopher-physician Hippocrates, who said, "The physician who is a philosopher is like a god." What he meant, I leave to your imagination. I could also remind you of John Locke, in the Seventeenth Century, of William James in the Nineteenth and Karl Jaspers and Albert Schweitzer in the Twentieth Century—all of them philosopher-physicians.

But history is an unsatisfactory meeting-ground, because little can be demonstrated from common origins. What is it, then, that has turned some philosophers to medicine and some physicians to philosophy? Is it not a shared interest in man—the most disturbing, the most striking and perhaps the most difficult of all objects of knowledge? His paradoxical nature is brought out by Pascal: "What a novelty! What a monster! What a chaos! What a contradiction! What a prodigy! Judge of all things, imbecile worm of the earth, depository of truth, a sink of uncertainty and error; the pride and refuse of the universe."

Man is the being I try to make reasonable and you try to make healthy. These ends are not mutually exclusive, so our efforts may develop in concert rather than in conflict. Since in 30 minutes I cannot construct a philosophical anthropology—i.e., tell you the whole story of man—I simply want to call some things to your attention which might be lost in a more detailed account.

We could begin with "Man is an animal," and at certain levels it is important for us to be reminded of that fact. But what kind of animal is he? There have been many attempts to fix *the* defining characteristic. He is a rational animal, a social, laughing, playing, creating, worrying, symbolizing animal, a rule-making, rule-obeying, rule-breaking animal. The list could be considerably extended. For example, he might be called a well-documented animal. From birth to death he is registered, enrolled, ticketed, docketed, labelled, given identity cards, required to "fill in on the dotted line," or to "sign here." Some aspects of his individuality are buried in acres of drawers, office files, record books, insurance statistics, health affidavits, employment certificates and character endorsements. That is the price we pay for trying to know ourselves, or at least for trying to keep track of ourselves. We should probably all agree that man is something more than what is inscribed in public documents. But what more is there? Well, at least, there is a sensitive, imaginative, reflective being who is puzzled by his own existence, by its promises and frustrations, who reaches out for friendship and love, and who is eager to try the powers which he feels moving within him.

What follows is not a diagnosis, although some have thought that man is incurably sick. I now only direct your attention to some things we need to keep in mind when we are trying to understand this complex being. I do not expect all of you to agree with me. I certainly wish to be provocative rather than banal, but I wish also to provoke you to thought, not to anger. I am not dispensing knowledge. I am proposing points of view, or perhaps merely issuing "reminders."

MAN IS EARTH-BOUND

First, then, it seems to me that man is part and parcel of the natural world, with the origin and destiny of a natural creature. Here is his home, and here his tomb. Neither the New York Life Insurance Company, nor penicillin, nor the holy sacraments, nor capitalism nor the American Medical Association can make him immortal. He belongs to time and space, and when his time runs out, so does his space, although with less abruptness. Yet as a natural being he is also a continual protest against his animality. To be an animal is a necessary condition of being a man, but not a sufficient condition.

Science, art and religion are among our ways of surmounting or transcending our animality. Many would agree that science and art reveal this natural world, but then protest against an earth-bound religion. But religion is not necessarily supernatural, and for medicine to take it as such can often lead to perplexities. I read the following two statements recently in an article by a physician: "Doctors have found that people are never closer to God than when they become afflicted," and "Every physician has seen unmistakable evidence of Divine Will." Now such claims to knowledge are of interest to a philosopher, but they are also puzzling if not misleading. If it is true that we do not yet know how to talk understandingly of the relation between spirit and substance, between faith and physiology, ought not such statements be more carefully considered and cautiously made? Neither the presence of mystery nor the condition of ignorance should allow us to go on scientific holidays.

A man can be a skilled brain surgeon or an authority on kidney diseases, but he cannot be skilled in religion or an authority on God. It doesn't make sense to talk of authority in spiritual matters. Religion is man's insistance that his life does not consist of a mere succession of events, or better still, in Whitehead's words, religion is "the art and theory of the internal life of man, so far as it depends on the man himself, and on what is permanent in the nature of things." If religious belief is an asset to health and healing, it is nature's art, but not her argument. A cure is no sign of a god's benignity; a failure no sign of a god's malignity. To think anything else comes perilously close to magic and superstition.

Too, frequently we hear of the conflict between science and religion, and less often of their contrast. It is important to avoid conflicts if possible, and to resolve them if the encounter cannot be escaped. But it is also important to recognize and acknowledge contrasts and to maintain them. Conflict is destructive, but contrast is creative. Contrast allows for art in a science that cannot live without it. In the research laboratory, medicine is a rigorous science, but in the hospital room its rigor gives way to something like an art. The physician must often make decisions on evidence that would horrify a Dupont chemist. What finally emerges as the truth about the natural world must probably be left to science. We need not, however, accept the crudities of an uninformed past, nor even the subtleties of an overconfident present, but we cannot dissolve the natural ties which determine man's role in history.

MAN IN CHANGING CONTEXTS

I remind you, in the second place, that man is a creature of multiple contexts, and that he cannot be understood apart from these contexts, but also that none of the contexts can claim him exclusively. We have a Greek view of man, a Jewish view, a Buddhist, a Catholic, a Protestant, a Marxist and an existentialist view. It is in liberal education that one may be introduced to the many contexts in which man can be placed and understood. But none of them has the one correct and privileged explication of the term *man*. He cannot be taken out of context, nor out of some perspective. We do not learn something truer about man from biology than we do from poetry, nor from psychology as compared to politics, nor from sociology as compared to history, nor from medicine as compared to the fine arts. But we may learn something different from each—some new dimension of human existence, some new and relevant context for man.

We are animals, it is true, and creatures of the natural world, but we are thinking animals and therefore revolutionary animals, for anyone who begins to think places some portion of his stable, comfortable world in jeopardy, whether it be the world of morality, religion, politics, education, or medicine. Man, in short, is a being who can change his point of view.

There thus is something appalling when ecclesiastical or other kinds of authorities try to fix a point of view for all contexts, and something even more appalling when intelligent men yield to such pressures.

The physician who says "I am a Catholic" or ". . . a Protestant" or ". . . a Jew" first, and then a physician has betrayed not only his science but also the human race. There is no Catholic cancer, no Protestant pneumonia, and no Jewish jaundice. The physician's first loyalty is to his patient, not to an ecclesiastical institution nor to a system of theology or a doctrinaire political system. Of all the sciences, medicine is the most human. Let it also be the most humane. All your antiseptic whiteness, all your plastic tubing and artificial organs, all your restrained assurances and your secret conferences—these often frighten your patients, who do not ask for less machinery, but for more humanity.

Here let me use a distinction suggested by Gabriel Marcel between "being present" and "being there." People who are present to us have made themselves available, have put themselves at our disposal. They give themselves to us by the way they listen. One who is simply there has a way of listening which is a way of refusing—i.e., of refusing himself. For the first, I am in his presence as a person; for the other, I am there as an object or even as a thing. For the one, I am a human being; for the other, a case.

Every child recognizes times when his parents are present, not merely there. Every student knows this about his teachers, and without doubt most patients know when their physician is listening, not merely hearing—when their physician is wholly available and thus offers something more than a temporary loan from his resources. Now of course neither parent, teacher nor physician can always be present to every claim made upon him, but in some degree the measure of his humanity is his capacity to be available. Institutions, dogmas, creeds are merely there; they are never present. We no longer speak of friendship. We have ugly substitutes like peaceful coexistence, togetherness and integration—all ways of being there without being present.

MAN'S INDETERMINATENESS

My third reminder is that man is essentially unfinished. His definition is always incomplete. But if we examine his life this should not surprise us, for it too is always unfinished. We do not know any incorrigible science, nor any absolutely valid morality, nor any universally true religion, nor any unquestioned philosophy, nor any final criterion for art. But this incompleteness makes the life of man unsurpassingly interesting, not interesting in the sense of immediate psychological titillation, but interesting in the sense of fertility, of a conversation that never palls, of a dialogue that never falters, of an adventure that persistently lures. The unfinished nature of man gives him his eminent vocation—to make himself. In making himself, he creates his worlds too—the worlds of science, art, religion and philosophy—for they are the actualizations of his imaginative possibilities. But these worlds are largely human constructions. Is there any sympathy in the world except that which comes from the human heart? Is there any understanding except that which comes from the enlightened human mind? Is there any love or

hope except that which wells up in human experience? Is there any morality except that which is generated out of individual insight and communal concern? Of course man's self-interests may take deliberately diabolical directions. Thus there are terrible risks. If man were complete, there would be no surprises, no suspense, no crises and no sense of fulfillment to mark his existence. But all of these we know intimately.

In ways that are still largely obscure to us, a creature has evolved who is able to modify or alter his sources and surroundings in such ways that they, in turn, can modify or alter him. There seems little reason to think that the inventiveness of nature has been exhausted. But we may ourselves bring an end to all our possibilities unless we learn quickly how to unite in human affairs a radical intervention of intelligence with a radical supervention of love. This we may call the union of science and religion, for it is no more surprising that out of electrochemical events should emerge wisdom than it is surprising that out of them should also emerge kindliness. But nature gives no guarantees. Thus we may have a Hitler as well as a Ghandi. But it is no more man's nature to behave like a beast than it is for him to behave like a saint. The great point about man is his indeterminateness, his infinite possibilities for creating himself. Like his philosophies, he himself is always unfinished.

MAN'S TRAGIC ASPECT

Finally, man is the tragic being. He can never complete himself. There will always be potentialities unrealized. His tragedy, in part, emerges in the conflict of values which are equally good but not mutually achievable. But more generally it lies in the fact that the realization of any possibility excludes the realization of some other possibility. This is the way the world is. This is the way life is. All human hopes, desires and ideal ends must conform to this tragic law. Thus tragedy transcends consciousness, for we are not always aware of alternatives. Tragedy is a timeless principle of which suffering and evil are temporal phases. It is the irrevocable law of existence that for anything to be, it must have some character, some specification. By this, our humanity emerges and distinguishes itself from the cosmic gases, our civilizations work their way out of the wilderness, and our individuality acquires its uniqueness and worth. But every fulfilled hope and every realized ideal has left behind a landscape of might-have-beens, without which the world is somehow tragically impoverished.

Our age, however, finds it difficult to accept tragedy as one of the dimensions of human existence. We have diluted it to "bad luck" or "not getting the breaks." For us, tragedy is essentially remediable if one keeps his wits, uses wonder drugs, changes the political situation, makes a more nearly perfect society, marries the right person, or gets enough exercise. Tragedy, we often think, is something to be abolished or overcome, rather than to be encountered, accepted and lived through. We have confused the Socratic injunction to examine life, with the medical injunction to get a check-up.

CONCLUSION

The proper response to tragedy is not horror, resignation or despair. It is reconciliation, which brings together in understanding the differences of our different lots. Thus the sense of tragedy is an achievement of enlightened maturity. It is only dimly present for youths, who make brief excursions out of the security of their samenesses. You physicians can drug away our pain, but not our tragedy, lest you take away the grounds of our humanity. For in tragedy we recognize our common losses and our common failures. We simply cannot be all we might be. International law will help to keep us from breaking down each other's fences, and perhaps intermarriage will make us all of one blood, but only tragedy will finally teach us what one human being can be to another human being. This is the mystery that religion and art, that medicine and philosophy, must ceaselessly explore.

Never before has the life of man been so fearfully threatened. Only a few of the endless yesterdays belong to him. The question now is whether the funded wisdom of the past and the skills and knowledge of the present can give him a tomorrow. Who shall save man?—those who have faith in him. Medicine must always be more than temporary scientific curiosity, and philosophy more than counsels of despair. Together we may make man the pride and not the refuse of the earth.

It's your professional privilege to replenish your ranks...

Give to medical education through AMA-ERF

AMA-ERF

American Medical Association
Education and Research Foundation
535 N. Dearborn St., Chicago 10, Illinois

Scientific Articles

Abdominal Pain in Childhood

JAMES MARVIN BATY, M.D.
Boston, Massachusetts

Abdominal pain is one of the most common complaints in childhood, and it is an important symptom for many reasons. If the complaint is neglected when it has resulted from organic conditions such as appendicitis or intussusception, complications are likely to occur which will threaten the life of the child. On the other hand, if too much is made of abdominal pain that has no organic basis, complications of an emotional nature may result. In handling children with abdominal pain, the physician must be constantly alert not only to all of the possible explanations for their symptoms, but also to the individual child and the particular environment. Children react in vastly different ways to what appear to be similar stimuli, and there are tremendous differences in the reactions of parents to the various complaints of their children. These parental reactions to illness are fascinating and may give important clues that are helpful to physicians in their attempts to understand the children in particular situations.

A concurrent serious illness in a relative or close friend is alarming enough so that parents may be much more, or perhaps less, concerned over a complaint voiced by their child at such a time than they might be at another.

Table I gives a list of the conditions which can be the cause of abdominal pain. It is almost like the table of contents in a textbook, and we shall not discuss each of the conditions individually and in detail. Yet, I should like to cite instances of some of them in an effort to present my philosophy about the handling of the child with abdominal pain. I plan to discuss this problem from the point of view of the practitioner as well as from that of the diagnostic hospital. Having been associated with such a hospital for over 30 years and having been engaged in a general pediatric practice at the same time, I am aware of the differences in the problems as they present in the two settings, and of the variations in approach which are necessary if one is to understand them.

THE ATTITUDE OF THE PATIENT'S MOTHER IS IMPORTANT

When a child complains of abdominal pain, the main question facing the practitioner is whether or not the condition is an acute one that may require surgical correction or medical observation and treatment. Acute appendicitis is the most common condition in this category, and it must be kept in mind as one examines youngsters of all ages, although it occurs more frequently in older than in younger children. When appendicitis is suspected, the child should be kept under close supervision so that the findings can be reevaluated frequently until the issue is settled. Ideally, such a child should be kept in the hospital for observation, but not necessarily for immediate operation. We have come to feel that an immediate operation is indicated very rarely in children with acute appendicitis or some other inflammatory condition in which surgical treatment is indicated. The patient's course will be less stormy and fewer mistakes will be made if a few hours are allowed to elapse after the patient's arrival at the hospital, for observation prior to surgery. During such a period there is time to complete and evaluate the indicated laboratory procedures, to repeat the

Dr. Baty is a staff member of the Department of Pediatrics, Tufts University School of Medicine, the Boston Floating Hospital for Infants and Children and the Children's Clinic of the Boston Dispensary. He made this presentation in Des Moines on April 8, 1965, at the Ninth Annual Raymond Blank Pediatric Conference.

examination of the child, and to correct the hydration if necessary. There is no evidence that the patient suffers from a brief delay such as this, and we believe it can actually be beneficial.

One of the systemic diseases which can mimic acute appendicitis at the onset is acute rheumatic fever. I have personally known four children on whom emergency appendectomies were performed at the onset of their disease. These operations were done by fine surgeons in children's hospitals —two of them in our own—and at the beginning none of the physicians involved had any question about the diagnosis. Nevertheless, the operations might have been avoided in each instance if surgery had been delayed for a brief period of observation and more careful evaluation.

TABLE I
ABDOMINAL PAIN

INTRA-ABDOMINAL CONDITIONS	
GASTROINTESTINAL TRACT	
Appendicitis	Diaphragmatic Hernia
Peptic Ulcer	Other Hernias
Malrotation	Constipation
Duplication	Parasites
Intussusception	Enteritis
Volvulus	Colitis
Meckel's Diverticulum	Regional Ileitis
Intestinal Polyps	Tumors
Mesenteric Cyst	
URINARY TRACT	
Anomalies	
Infections	
Calculi	
Tumors	
LIVER	
Infectious Hepatitis	
Cholecystitis	
Cholelithiasis	
PANCREATITIS	
PERITONITIS	
ADENITIS	
Mesenteric	
Iliac	
MESENTERIC-VEIN THROMBOSIS	
EXTRA-ABDOMINAL CONDITIONS	
Pneumonia	
Pleurisy	
SYSTEMIC DISEASES	
Epilepsy	
Rheumatic Fever	
Sickle-Cell Anemia	
Leukemia	
Splenomegalies	
ALLERGY	
COLIC	
PSYCHOGENIC OR PSYCHOSOMATIC	

On the other hand, the child suspected of having acute appendicitis must be re-examined frequently because of the danger that the process may advance to rupture and peritonitis. The younger the child, the more likely the appendix is to rupture and the less satisfactorily the child can localize the process. In this context I always remember a little girl whom I was called to see when I first began practice. I do not recall the details of her story or findings, but I thought she probably had early acute appendicitis. Her mother obviously was not thoroughly convinced by the young doctor whom she had never seen before, and with only a questionable diagnosis she refused to take the child to the hospital for observation. She assured me that she would call if her child continued to complain. By the time she called me, on the next day, the appendix had ruptured. The child recovered, but I have always felt that her protracted illness might have been avoided. In retrospect, I think I should have compromised with the mother and revisited the child later that same day. The diagnosis should have been clearer by that time, and when given a more definite diagnosis, the mother might have been willing to take the child to the hospital.

Another child taught me a different lesson about abdominal pain that I have never forgotten. Johnny had been brought to see me on several occasions over a period of about two years because of abdominal pain. Each time the examination had been entirely normal, and I had assured him and his mother that there was no evidence of appendicitis or any other condition about which they need be concerned. Then one day I was visiting his sister for a minor respiratory infection and through the window I saw Johnny, then about seven, coming home from school. He was walking slowly, limping and keeping his right thigh slightly flexed —obviously guarding his right abdomen. When I asked his mother how long he had been complaining and asked her why she had not called me, she admitted that the symptoms had been present for about two days. Johnny underwent surgery on that afternoon, and made a rapid and complete recovery following the removal of an appendix that was acutely inflamed and swollen, but fortunately not ruptured. There is no reason for believing that there was any connection between the episodes of abdominal pain which that youngster had had previously and his attack of acute appendicitis. His previous episodes had been much more dramatic, so that when the real thing occurred, with grumbling and persistent pain in the right lower quadrant, his mother was not worried.

Since that episode, I have always warned the parents of children who have had attacks of unexplained abdominal pain that although the previous attacks have been innocuous, complaints about abdominal pain cannot be ignored in the future. Each such episode must be evaluated when it occurs, since the child can develop an acute condition at any time.

One of my most fascinating experiences with abdominal pain was with a little girl who also had had several unexplained attacks of pain over a period of about a year. When she was about eight years old, she was brought to my office one afternoon because of vague, intermittent, mid-abdominal pain throughout the preceding four or five days, and persistent pain for two hours. After examining her and doing a urinalysis and a leukocyte count, I thought that she had acute appendicitis and sent her directly to the hospital. During the next few hours her pain and tenderness disappeared, her temperature and leukocyte count returned to normal, and we decided to observe her overnight.

One of our psychologists greeted me on my arrival at the hospital in the morning, and asked me what was wrong at Ann's house. I knew of nothing wrong, and of course I wondered why she should ask. She had been getting acquainted with Ann that morning, and had asked her to draw a picture of a house. She had been startled by the coldness of the house that Ann had drawn, for it had no chimney. We were at a loss to interpret that omission, until shortly afterwards Ann's mother called to say that she was staying at her mother's because she and Ann's father had had a squabble the night before. We decided that the family's problems probably accounted not only for Ann's drawing a house without a chimney, but also for her recurring attacks of abdominal pain.

The parents worked out their difficulties, and Ann has done very well and now is a senior in college. At 15 years of age, she finally did have her appendix removed, when a hemorrhagic cyst of her right ovary precipitated the operation. The appendix appeared normal, and microscopic examination showed no acute or chronic inflammatory changes.

The three experiences that I have cited are excellent illustrations of the important role the mother plays in childhood illness. The physician will always have a better understanding of his child patient if he is able to find out something about the feelings and concerns of the mother, particularly at the time of an acute episode.

OUR SERIES OF 42 SUCH PATIENTS

Many of the children who complain of abdominal pain have no disease or abnormality to which the pain can be attributed. These children have interested us for years, and as a group they have constituted one of our most baffling diagnostic and therapeutic problems. Every year a number of such youngsters are admitted to our hospital for evaluation, and about 12 years ago we carried out a study over a three-year period on 42 of them. Our findings were reported at a meeting of the American College of Gastroenterology in October, 1957, but I should like to present them to you, together with recent follow-up reports about them.

These children who came to the Boston Floating Hospital because of unexplained, recurrent abdominal pain were studied by the members of the Medical and Psychiatric Services working together and concurrently. In addition to the procedures which are done regularly on all hospitalized children, the medical investigation of these patients included x-ray examination of the gastrointestinal and urinary tracts, and any other special studies such as electroencephalograms which seemed indicated in individual instances. The psychiatric evaluation included interviews with the child and with the parents, and testing and observation of the child on the wards and in the playroom of the hospital. Before we sent the child home, the psychiatrist and the pediatrician held a final conference with the family and the child, and the findings and recommendations were transmitted to the child's physician.

Muriel, who came to the hospital at the age of 6½ years, is illustrative of the group to be discussed. She had been referred for investigation because of recurring attacks of abdominal pain over a period of 10 months.

Her family consisted of her mother and father, a 9½-year-old sister and an 11-months-old brother. Her father was a tall, handsome man with a soft face and a somewhat helpless attitude. He appeared sensitive and introspective, and as a little boy he had had pains similar to his daughter's, particularly when he felt unhappy and frustrated. About two years previously there had been a question of his being drafted into the Army. After that crisis had passed, the company for which he worked had promoted him to a responsible job for which he felt inadequate. During that period he had gradually developed epigastric symptoms which he "kept to himself," and finally a bleeding ulcer had required his hospitalization for 10 days. Subsequently, he had returned to work in a less demanding position, and had remained essentially well.

The girl's mother was pretty and very tidy—a bit too prim. She seemed sincere, well-meaning and quite defensive. When Muriel was four years old, the mother had been taken to the hospital in an ambulance because of a miscarriage.

It was difficult to get realistic information about the girl's early history because her mother obviously confused actual occurrences with what she had found in books and magazine articles on how to bring up children. The mother had been

physically well but emotionally upset and unhappy during her pregnancy with Muriel, for she and her husband and older daughter had been living with her mother, with whom she did not get along well. The delivery had been a difficult breech, and she had received very little anesthesia. While she was in the hospital, another woman's baby, born by breech delivery, had died.

Muriel had been bottle-fed. The mother said there had been no feeding problems, but her husband reminded her of spittings-up after feedings and many formula changes. Later, the infant had become a fairly good eater, but had always been "picky." There had been no training problems.

The parents described Muriel as a little girl who was anxious to please, was not aggressive and seemed upset by the aggressive behavior of others. She had very few playmates, and preferred to play alone. She had many anxieties such as fear of the dark and fear of poverty. For about five months she had been waking in the middle of the night and getting into her mother's bed. The mother, father and infant brother slept in one bedroom, and Muriel and her sister slept in the other.

Muriel had been well and had had no illnesses other than rare mild respiratory infections. About 10 months before admission (shortly after the birth of her brother) she had begun to complain occasionally of abdominal pain, but she appeared well and nothing was done about it. She had started to school about six months before coming to the hospital. On the first day of school, she had become acutely ill, with fever, abdominal pain and vomiting. She was found to have acute tonsillitis, and she recovered rapidly on antibiotic therapy.

After that illness she had returned to school and was thought to be well and happy. She had then begun having occasional episodes of abdominal pain, however, during which she appeared pale and lay quietly curled up on the couch for about an hour. The attacks occurred only during the day, and were thought to be unrelated to her diet, meal time or activity.

At the time of her acute illness, a tonsillectomy had been planned for about two months later. Her father's hospitalization for treatment of his bleeding ulcer ended just a couple of days before Muriel had to go to the hospital for her operation. She made a quick recovery and again returned to school, but she began having more frequent attacks of abdominal pain and had to stay home or was sent home several days each week. She seemed unhappy at missing school, and her attacks occurred during weekends as well as on school days.

Nothing abnormal was found on physical examination and complete medical investigation. Muriel was an intelligent, attractive, polite and carefully controlled little girl. She was poised and obedient on the ward and in the playroom, and she showed no outward sign of insecurity or tension, but her eyes betrayed her anxiety. She seldom looked into one's face, and she talked about her father, and about blood and operations, and said she did not know what was cut out when she had her tonsil operation. She also spoke of her fear of the dark.

It was felt that her pain was psychogenic, and her physicians—including the psychiatrist—discussed the problem fully with the parents before she went home. They and Muriel were assured that she was healthy and that she had no physical abnormality to account for her pain. Her father was told that there was no basis for his fear that his ulcer might be hereditary and might be the cause of his daughter's pain. During the discussion, the parents became reassured about Muriel's physical condition, seemed to understand, and were able, themselves, to relate the occurrences of the past two years to the development of anxiety and tension in the child, which finally found expression as abdominal pain.

It was suggested that Muriel be sent back to school immediately, and that the parents and teacher, while being kind, should reassure her that her pain was not serious and did not warrant her staying at home. Also, the sleeping arrangements of the family were changed so that the three children had the larger bedroom and the mother and father took the smaller one.

Two years later, Muriel returned with her mother for a follow-up interview. She had been fine and was doing very well at home and in school. She had complained of abdominal pain a few times at the beginning of the new school year, but each time she had been easily reassured, and the pain had not recurred.

The girl and her mother were interviewed six years after her hospital experience, and again four years later. On the last of these occasions she was 16 years old, a lovely young lady 5 ft. 8 in. tall, and very well. She was an excellent student and planned to go to college. She did not engage in extra-curricular activities in high school, but she was dating and seemed to enjoy her peer relationships. She still was a worrier, but had had no recurrence of the abdominal pain and had had no complaints except for mild menstrual cramps. The onset of her menses had occurred at the age of 12 years.

Each of the 42 children included in this study group had a "complete" medical investigation and a psychiatric evaluation while in the hospital. Those studies revealed no evidence of disease or abnormality which might have accounted for the symptoms. All the children were of normal intelligence and showed no signs of obvious personality disorder or emotional disturbance. A number of other children were studied medically in the clinic or the hospital because of unexplained

recurrent abdominal pain during this same period. They were not included in this group, since for various reasons, although some of them were seen once in consultation by the psychiatrist, they had not been evaluated thoroughly. In some instances there had not been enough time, but more commonly either the referring physician or the patient's family had not desired a psychiatric investigation.

All of these 42 children had begun to complain of abdominal pain between the ages of four and eight years—the majority at five or six years. Four of them were over age 10 when they were studied, but for three or four years they had been having recurrent episodes of pain which either had not been severe enough or had not created enough anxiety to precipitate hospitalization. During the same period a few children were investigated because of unexplained abdominal pain beginning in early adolescence or pre-adolescence. They are not included in this group because the mechanisms underlying the development of the symptom seemed different, and we felt that the problems in this age group were more involved than were those in the younger children.

Recurring attacks of abdominal pain were responsible for the hospitalization of all these patients. The majority of the children localized the pain in the periumbilical area, and a few placed it in the epigastrium or across the lower abdomen. One or two complained of pain in the right lower abdomen. The character and duration of the pain varied considerably in the different individuals, and at times in the same child. Most commonly it was dull, but occasionally it was described as being very sharp. It was momentary in some instances, but frequently it lasted 15 to 20 minutes, and in rare instances as long as an hour. Some of the children said they had a more or less constant dull ache. "Attacks" frequently lasted from one to several days, alternating with days or weeks during which the child was symptom-free. The relation between the pain in the child and tension either in the child or in members of the family constellation could not be evaluated. The pain occurred at all times of the day, and seemed unrelated to meals or individual foods. In only one instance did the child complain during the night, and he apparently had not been awakened by the pain. Vomiting occurred occasionally, but more commonly the children expressed a fear of vomiting, but actually did not do so. There were no associated bowel or urinary symptoms.

Each of the children had been examined by a family physician during attacks of pain, and several had had previous admissions to other hospitals for observation, during which various investigative procedures had been carried out.

The family histories of these children are interesting because of the occurrence of what we came to think of as a "pain climate." One or more close relatives in each family, and frequently one of the parents, had been experiencing pain of some sort for years. Pain attributed to ulcers and actual peptic ulcers, recurrent abdominal pain, abdominal operations, chest pain and frequent incapacitating headaches were most commonly encountered.

The personal histories of these children, in almost every instance, revealed feeding difficulties during the first three months of life that had not, however, interfered with normal gains in weight. There had been excessive crying, and most of them had had what their parents described as colic. They had been "spitters" who vomited small amounts of food frequently, and they all had had several changes in formula during that period. Afterwards, most of the children were described as having been "good eaters," and they had had no particular problems.

Almost all of these children were characterized by their parents as "worriers." They worried about their school work, about the possibility of their failing in school, and about family finances. They also had many fears such as fear of the dark and fear of death.

Treatment consisted simply of reassuring the child, the parents and the family physician. This was partially accomplished during the observation period, by telling the child and the parents that the tests were negative as they were performed. When the investigation had been completed, the pediatrician and the psychiatrist held a conference with the child and the parents, during which the entire problem was discussed in detail. The purposes and the results of the various procedures were explained, and the family was assured that there was no evidence of an underlying abnormality that could be altered by medical or surgical treatment. The parents and child were told that although the exact mechanism of the production of pain was not understood, it was a consequence in some way of worry and tension, and even if the pain recurred from time to time (and it probably would), that it should not cause concern or be allowed to interfere with the child's activities. The child's and the parents' questions were dealt with candidly, and they were offered an opportunity to return for further discussion, should the need arise. The referring physician was involved as much as possible in each instance. His approval was obtained for the plan of investigation at the time of referral or following the initial interview. He was kept informed as the studies were carried out, and afterwards was given a summary of the findings and recommendations. Also, the parents were advised to inform the child's teacher of the hospital experience.

FOLLOW-UP STUDIES

As measured by short-term follow-up, the results in this group of 42 children were good. In all instances except one, the abdominal pain became no problem after the hospital experience, for it became mild and sporadic or disappeared entirely. Our one failure was in the young daughter of some recent immigrants. They mistrusted the new culture and met everything with suspicion, including medical reassurance about their child's pain. Shortly after we sent her home, her appendix was removed in another hospital. It was reported to us that the appendix was normal and that the child continued to have attacks of abdominal pain for about one year after its removal. Five years later, however, when she was 12 years old, we found that the girl had made an excellent adjustment, was doing very well in school and was having no complaints.

About five years after that group of 42 children were originally studied in the hospital, interviews were obtained with 31 of the youngsters in addition to the little girl cited above. Their ages ranged from 9 to 19 years at that time. Abdominal pain had not been a problem for any of those children after their hospital experience, although eight of them had complained for a time about mild, transient pain. Sixteen of the children were thought to be healthy at the time of follow-up, they were doing well in school, and they had no complaints. The other 15 youngsters all had neurotic symptoms, including aches and pains of one sort or another, but abdominal pain was no longer a prominent symptom. Several of these latter were not doing well in school.

In an attempt at a 10-year follow-up, we were able to contact only seven of the group. Five, including Muriel, were doing well, had had no operations and had no complaints. One girl had had two ovarian cysts and her appendix removed shortly after her previous follow-up, and later had had an operation for pains in her legs. At 21 years of age, she said that she was well except for occasional headaches. A boy 18 years of age who had been doing well at the time of the previous follow-up had been having unexplained headaches for the past two years and was not doing well in school.

CONCLUSIONS

We believe that in each instance the abdominal pain which brought these children to the hospital for investigation was on a psychogenic basis. We do not understand the exact mechanism of the production of pain of this type, but it seems that it may be simple and largely the result of anxiety and tension, and that it may be precipitated by a number of different stress situations in the child's environment. Needing reassuring support from his parents, the child feels pain and asks for help. The nature of the complaint, however, breeds anxiety in the parents. This, in turn, increases the child's preoccupation with himself and thereby aggravates the symptoms. The concern of the parents and of the child may be further increased if the doctor either is too casual or is excessively alarmed by the complaint. By giving authoritative reassurance early in the course of events, the doctor may be able to break this vicious circle. In order to accomplish this, the physician must first be sure in his own mind that there is no organic disease to account for the pain, and he also must have the trust and confidence of the family in order for his reassurance to be accepted.

In the group of children with psychogenic abdominal pain on whom we have reported here, the diagnostic procedures served two purposes. First, as far as possible, it seemed important to rule out an organic basis for the pain in each child. Second, the tests corroborated the clinical opinion and supplied acceptable and more tangible evidence which was useful in convincing the child, the family and the family physician that no underlying disorder was producing the pain.

Barbiturate Record-Keeping Requirements

All health practitioners handling stimulant and depressant drugs must prepare complete inventories of their stocks on hand as of February 1, 1966, and must keep those inventories for three years. Subsequently, they must maintain records of all such drugs that they receive and dispense.

Records must be made of professional samples of stimulant and depressant drugs obtained from detail men, and likewise those medical representatives must keep records of the samples they have given to pharmacists and physicians.

Prescriptions for depressant and stimulant drugs may be given orally or over the telephone according to the usual practice, *but no prescription order can be renewed more than five times,* and *no prescription order can be dispensed or renewed more than six months after date of issue.*

These regulations are pursuant to HR2, the Drug Abuse Amendments of 1965, which become effective on February 1, 1966. Barbiturates and amphetamines are specifically named in the law, and in addition the HEW Secretary may include other drugs which may be habit-forming because of their depressant or stimulant effect on the central nervous system or because of their hallucinatory effects. Thus it is expected that certain tranquilizers will eventually be covered.

A pamphlet entitled "HR-2 and You" has been prepared by the American Pharmaceutical Association, and copies of it are available either from member pharmacists or from the Iowa Pharmaceutical Association, 302 Shops Building, Des Moines 50309.

Surgery of the Biliary Tract

A Symposium

Dr. Frank Glenn: Our subject this afternoon is of interest, I think, to anyone who is practicing medicine. Biliary-tract disease is not only one of the most prevalent ailments, but it is one that we can do a great deal about. Whenever something is prevalent and there is much to do about it, you can be sure that there will be many ideas as to how it should be done.

The purpose of having a panel discussion is not to review everything in detail. That would be impossible. Rather, we want to do a little needling this afternoon, to emphasize, perhaps, a few controversial points. You are to participate in this, and we're having some pieces of paper passed out. I hope you'll put down the questions that come to your minds, and pass the notes forward during the presentations.

Each member of the panel here will state a few facts. I trust that their statements will stimulate you to ask some questions. The first member of the panel to speak to you will be Dr. Capps. In my opinion he is one of the superior diagnosticians and internists of this country.

Dr. Richard B. Capps: I want to say a few words about one of the more important diagnostic problems concerned with biliary-tract disease, namely the diagnosis and management of jaundice. Obviously I can make only a few remarks, but there are some important items that I'd like to bring to your attention. When one sees a patient with jaundice, the principal thing one wants to know is whether the patient has parenchymal liver disease and jaundice, or whether he has common-duct obstruction. This is, of course, a very critical differential, because on the one hand the treatment must be surgical or the obstruction will not be relieved, and on the other hand, if one operates mistakenly on a patient with hepatitis, the patient may die of acute liver failure.

There are certain historical facts which, of course, are of value. I'll mention just briefly the nature of the onset, and the presence of pain, if there is pain. When there isn't pain, one of course has the more difficult differential diagnosis and the question of exposure of various sorts to the hepatitis virus. Physical examination is occasionally helpful, particularly if one finds spiders or palmar erythema indicating the probable presence—not necessarily but the probable presence—of chronic liver disease. Patients with chronic liver disease, one must remember, can become jaundiced too, and they are frequently mistaken for patients with simple acute hepatitis. The presence of a palpable spleen is, I think, a valuable finding, indicating parenchymal liver disease, of course. Examination of the liver isn't particularly helpful, unless it is hard and firm, indicating cirrhosis.

As far as the laboratory is concerned, we often get quite a bit of help from there. I would strongly recommend that in the use of the laboratory, in this differential diagnosis, one should try to concentrate on a few important tests. Furthermore, they should be run serially. One gets quite a bit more information in that way. Perhaps the most important of the newer tests are the enzymes, SGOT being the most commonly employed. Particularly in using that test in this differential, but in other tests, too, to some extent, I'd point out that it is important to take into consideration the duration of jaundice in interpreting the results. SGOT, for example, is often markedly elevated only during the first week or two of hepatitis—to 400 or 500 units or perhaps more. Later on it may be only 100 or 150 units, as it frequently is in patients with common-duct obstruction. On the other hand, with common-duct obstruction, the SGOT is relatively low until the obstruction has been present for a period of time. If acute, febrile cholangitis develops, the SGOT may rise to quite high levels. If there is no fever, in acute cholangitis, the SGOT may gradually rise to moderate levels, but the duration of the jaundice, you see, is a critical point.

Two other tests, I'd strongly recommend. One, of course, is alkaline phosphatase, with which you all are acquainted. The other is the level of the serum

---

The participants in this symposium, held in Des Moines during the 1965 annual meeting of the Iowa Medical Society, were: Frank Glenn, M.D., of New York City, surgeon-in-chief at New York Hospital and professor of surgery at Cornell University Medical College; Richard B. Capps, M.D., clinical professor of internal medicine, Charles B. Puestow, M.D., clinical professor of surgery, and John T. Reynolds, M.D., clinical professor of surgery, all at the University of Illinois Medical School, Chicago; and Robert E. Wise, M.D., Boston, chairman of the Department of Diagnostic Radiology at the Lahey Clinic Foundation.

globulin. It is well to note the albumin and globulin levels separately. The globulin does not rise in common-duct obstruction until the condition has been present for between four and six weeks, at least, and usually longer. It is elevated in at least 50 per cent of cases of acute hepatitis.

Now to return to the main problem. We very often are unable to make an accurate diagnosis, and it is my feeling as an internist, that if there is any reasonable chance that one is dealing with hepatitis, one must act in the following manner. By waiting for a matter of maybe three or four weeks, one doesn't do any significant harm if the diagnosis is common-duct obstruction. On the other hand, the diagnosis usually is clarified after three or four weeks. The second point in this regard is that surgery in acute hepatitis is fatal during the rising stage of bilirubin. This is the dangerous time. After the peak of bilirubin has been reached and convalescence has set in, one can operate erroneously and usually end up with a live patient, though the surgery of course doesn't do the hepatitis any good. Thus, waiting until the situation subsides has two important values. One is that the diagnosis becomes clear, in most instances, and the second is that if the ailment is hepatitis, one can avoid losing the patient as a surgical death. This, I think, is a very important consideration, and I don't think it's generally recognized how much difference there is in the surgical risk in the early and the later convalescent stages of hepatitis.

Dr. Glenn: Thank you, Dr. Capps. The next member of the panel is Dr. Puestow, who will mention some points in differential diagnosis in lesions relative to biliary-tract disease and its complications.

Dr. Charles B. Puestow: I think biliary-tract surgery is one of the most gratifying fields of surgery. I am going to start out with the hypothesis that we ought to cure 95 per cent of the patients with biliary-tract disease on whom we operate. We know that this isn't true in practice, and I should like to spend a few minutes telling you the reasons why we don't get uniformly good results.

The most important factor in a persistence of biliary-tract symptoms is an error in diagnosis. We make a diagnosis largely on the basis of a good history. History-taking is the most important thing that we can do in avoiding mistakes in the diagnosis of this disease. The type of dyspepsia, the character of pain, the location of the pain and its radiation are all very important.

We have certain aids in the diagnosis of this disease. One of them that I shall mention just briefly consists of radiologic findings. Since Dr. Wise is to talk about this, I will make my comments very brief. It is true that a radiologist can tell us whether a gallbladder is functioning or non-functioning. Under certain circumstances he can visualize the stones for us, but he cannot tell us whether the patient's symptoms are due to the stones that are shown radiologically. He can also report to us that the patient has a normally-functioning gallbladder without stones when biliary-tract disease actually is present. If we use radiologic findings as our guide as to whether or not we should operate and whether a cholecystectomy should be performed, we are going to have a number of people with residual disease. What are the reasons for this residual disease? In the first place, as I mentioned, there are errors in diagnosis. The most frequent single mistaken diagnosis is the confusion of biliary-tract disease with functional types of dyspepsia. Patients can have symptoms very similar to those produced by a diseased gallbladder and yet have no disease in the biliary tract, their symptoms being entirely on a functional basis.

There are a number of organic conditions which likewise can produce symptoms similar to those of biliary-tract disease. One of the commonest of these is hiatus hernia. In the days when hiatus hernia was not looked for too frequently in radiologic examinations, many patients had their gallbladders removed, only to continue having symptoms and subsequently to have a hiatus hernia found. One of our late prominent American surgeons reported that in a large series of operations performed for the repair of hiatus hernia, over 50 per cent of the patients had had their gallbladders removed previously, had not been relieved of their symptoms, and therefore had continued having their symptoms until the hiatus hernia was cornected.

Pancreatic disease is another organic ailment that may be confused with biliary-tract disease. It can be distinguished if, again, one is very careful in the history-taking. There is a difference in the location of the pain and in the radiation of the pain, and there are other findings which will help to establish the diagnosis of pancreatitis. These include tests for pancreatic function, steatorrhea, weight loss, and the deep-seated pancreatic pain which radiates through to the lumbar area.

Atypical peptic ulcer can also simulate biliary-tract disease, and if one isn't careful to make the differentiation between these two conditions, many gallbladders may be removed without providing relief to the patient because the symptoms were on the basis of an atypical peptic ulcer. These are the three commonest organic conditions which can be confused with biliary-tract disease.

Another factor in the persistence of symptoms after biliary-tract disease consists of errors in surgical technic. One of these is residual disease. In the old days when the gallbladders used to be opened, the stones removed and the gallbladders closed, patients came back with recurrences of their trouble. This isn't done so often now as it was in the past, but we still have residual disease. Sometimes the gallbladder is taken off just above the neck, and part of it is left behind. A long cys-

tic-duct stump, whether or not it contains stones, can produce symptoms just as severe, or even more severe, than those the patient had when his gallbladder was intact.

I would like to show you two slides of radiographs showing residual cystic duct stumps. Figure 1 shows a dilated common bile duct and a dilated and bulbous cystic-duct stump. This patient had severe symptoms with marked weight loss, pain and dyspepsia. The second radiograph (Figure 2) shows the common duct and a very long cystic-duct stump. The patient was a doctor's wife who lost 40 pounds in weight, had persistent pain for three years, nausea and vomiting, and was treated with steroids and tranquilizers and with psychiatry. By removal of the cystic-duct stump, she was cured.

Another form of error in surgery is the traumatic. If we damage the common duct, if we damage the blood vessels to the liver, we are likely to have a persistence of symptoms. Other residual diseases can also cause it. These consist of cholangitis, common-duct stones and adjacent disease. If these are not or cannot be taken care of at the time of operation, the patient will not be relieved. The average layman waits six years after his first colic before he has his gallbladder removed. The average physician waits 15 years after his first colic before he has his gallbladder removed. In such a length of time, the disease can spread. So, I go back to my first hypothesis: If a correct diagnosis is made, if the patient is suffering from gallbladder disease, and if the gallbladder is taken out properly and early enough so that the disease has not spread, we are going to cure most of our patients.

Dr. Glenn: Thank you, Dr. Puestow. At my institution, and I have an idea that in yours, too, we frequently must call upon the "Answer Department" to help us arrive at a diagnosis. One of the great contributions to surgery in this country, you know, is the section on cholecystography in Graham, Cole, Copher and Moore's DISEASES OF THE GALLBLADDER AND BILE DUCTS (1928). In retrospect, we think that it appeared a long time ago. There have been many refinements since then, and certainly internist and surgeon alike are very much dependent upon the roentgenologist. Dr. Robert Wise will say something to us about differential diagnosis.

Dr. Robert Wise: I could not agree with Dr. Puestow more when he states that we cannot decide, after we find the calculi, etc., whether or not the symptoms are being caused by these calculi. I think we do a reasonably respectable job of finding calculi in gallbladder disease, but I make no pretension that I can decide whether they are causing the symptoms generally.

I should like to talk a bit about the intravenous cholangiogram, since it is the newest modality with which we deal. The intravenous cholangiogram, in my opinion, is not a substitute for oral cholecystography. It is an adjunct and it is complementary, but it is not a substitute. I personally believe that for survey work and also for myself, if I need it, I prefer an oral cholecystogram over

Figure 1. Residual dilated cystic-duct stump.

Figure 2. Long residual cystic-duct stump.

the intravenous cholangiogram for evaluation of the gallbladder.

I shall attempt to answer a few of the questions that frequently arise with discussion of intravenous cholangiography. What is the significance of non-visualization of the gallbladder by the intravenous cholangiogram? The failure of the gallbladder and of the bile ducts to opacify is meaningless insofar as the gallbladder is concerned. This indicates that the liver is not excreting the Cholografin. On the other hand, if the bile ducts are opacified and the gallbladder is not, the situation is significant. In Group I about 70 per cent of patients with the common duct opacified and the gallbladder not, had primary gallbladder disease. In Group II, about 9 or 10 per cent had primary common-duct or pancreatic disease with a normal gallbladder. In Group III, roughly 20 per cent had combined gallbladder and common-duct disease.

We then may say that if the common duct opacifies and the gallbladder does not, we have a mechanical obstruction of the cystic duct, whether it be due to impaction of a calculus in the cystic duct, inflammation, stenosis, fibrosis, etc., plus the fact that in common-duct disease or pancreatic disease one may have thick, inspissated bile within the gallbladder, preventing the entrance of Cholografin. Thus, if one visualizes the duct and doesn't visualize the gallbladder, in my opinion—and Dr. Glenn has given me permission to say this—one should call in a surgeon, for the condition of the patient is surgical.

A second question that arises is: What is the significance of common-duct size? Does the cystic or the common duct dilate because we take out the gallbladder? To make a long story short, after surveying several thousand cases, I can say that the common duct does not dilate simply because we've taken out the gallbladder. Therefore, we must then decide what the significance of size is in the common duct if we see dilated ducts. May I have the next slide? Here is a patient with a gallbladder present in the slide on your left. The common duct, you see, is probably 5 to 7 mm. in diameter. One year later we had an opportunity to examine that patient, and the common duct is seen to be about the same size. So here is evidence that the common duct doesn't necessarily dilate because we have taken out the gallbladder.

Next slide. On occasion we have the opportunity to examine a patient and we see a dilated duct after the gallbladder has been removed. Here we see a faintly opacified duct in the center of this slide. It is approximately 8 or 9 mm. in diameter. One year later the patient returned, and we see a large calculus at the lower end of the duct.

We may then say that if we see a dilated duct, and if we have a base-line cholangiogram taken prior to the removal of the gallbladder, we probably have a surgical condition on our hands. It probably is a calculus, though it may be a tumor, it may be stenosis of the sphincter of Oddi, or there may be some other cause.

Next slide, please. If we have a dilated duct and don't have a base-line cholangiogram, how do we evaluate the significance of a dilatation? We resurveyed a number of patients, and you will see in the curve of obstructed cases—these were proved at surgery—that if the patient has obstruction proved at surgery, the preliminary cholangiogram will have been shown to reach a plateau and an increase in density at 120 min. as compared with a 60-min. film. On the other hand, if the patient does not have obstruction at about 60 min., the density will begin to fall off in the common duct. This parallels the work of Dr. Fischer, at the University of Iowa, who is studying I^{131}-tagged Cholografin.

Next slide, please. This, we term our time-density-retention concept, and on the basis of this we feel that we can, with some validity, make the diagnosis of partial common-duct obstruction. Here we have such a case in the slide on your left. It was made at 60 min. The slide on your right was made at 120 min. You'll notice that this duct isn't draining freely and that there is evidence of obstruction. The duct is dilated. The patient did in fact have a common-duct calculus impacted in the ampulla of Vater.

Next slide. This is a similar situation. The slide on your right showed a lack of drainage, and again we found a common-duct calculus in the lower end of the duct, partially obstructing it. Incidentally, this concept holds only if the gallbladder has been removed, or if the cystic duct is occluded and in a so-called pathologic cholecystectomy.

These are the statistics referable to this concept. Briefly, I think you will see that our accuracy of diagnosis is roughly about 90 or 91 per cent. That is as much as I could squeeze out of it, in going over the statistics. On the other hand, we found that we made a diagnosis of common-duct calculus by direct visualization—i.e., we actually saw the stone—in only 60 per cent of the cases. By giving attention to the concept of time-density-retention, we were able to add 40 per cent.

Next one, please. I'd like to throw the fat into the fire, here. Dr. Glenn has again told me that I could do this—that I may tell surgeons what to do. It is my own personal opinion that all cystic-duct remnants need not be removed. That is the business of the surgeon, and not mine. My job is to find them.

Dr. Glenn: Thank you, Dr. Wise. Now we've got a little controversy started.

The next member of the panel is going to talk about something that is of considerable importance. Surgical therapy has increased in this country by leaps and bounds, since I was a medical student, for instance. Why? Because it has been made safer and more effectual than ever before. Now for it to be effectual and safe, we have to

anticipate the complications that can occur after biliary-tract surgery. Dr. Reynolds, in his long association with Warren Cole, has been schooled well in conservatism and in avoiding trouble by anticipating it.

Dr. Reynolds: I've had it all delivered to me. You see, the diagnosis has been well established; there is no doubt that the patient has to be operated upon; and we simply have to proceed.

As regards Dr. Glenn's remark about Dr. Cole, I'd like also to point out that both Dr. Puestow and Dr. Cole have been very instrumental in my thinking. I remember very clearly Dr. Puestow's once making the remark that there's no such thing as an emergency gallbladder. He only said that to irritate us, but it made us think we didn't have to operate on everybody who came to see us, as an emergency. That is one of the important things to keep in mind in an endeavor to avoid trouble. One should try to distinguish between an emergency case of biliary-tract disease and a non-emergency. An emergency biliary-tract disease—when it occurs—is very serious, and must be recognized and properly treated. But as Dr. Capps has also pointed out, it is very rare. In the majority of cases one can wait, and one can observe the patient.

Now if you try to think of what causes trouble, in biliary-tract disease, after surgery, there are two sorts of errors. First are the errors that the surgeon makes in organs that aren't biliary-tract in nature, and second is his error in handling the biliary tract. I'd like to point out a couple of things. In the first place, I believe it is true—or the statement is only proven by the one exception —that if one cuts the hepatic artery by error, and the patient doesn't have cirrhosis of the liver, the patient will die. I suppose someone will jump to his feet and say he knows of an instance in which death didn't occur, but the majority of patients will succumb. So the first thing that you have to decide, in the abdomen, is the location of the hepatic artery. That is the *sine qua non.* Luckily, the hepatic artery is in its proper place a good part of the time, so even if you haven't been accustomed to doing this, you're likely to get away with it. But this is a very important thing.

Second, in operating on a patient with biliary-tract disease, you must observe two laws. First, you must leave no gangrenous portion of the biliary tract in place. Dr. Glenn's book is beautifully illustrated and contains exact instructions on how to handle this problem. Second, you must not leave any condition in which bile cannot drain properly, either well to the gastrointestinal, or well diverted from the peritoneal cavity. These are really the basic things that we have to keep in mind.

How can we avoid trouble? Well, I recently saw a man who weighed 320 lbs. who had had his gallbladder taken out and complained of a persistence of exactly the same symptoms that he had had before. Well, the mistake which had been made was that of not being careful about operating upon this man when he was in proper shape. The surgeon could perfectly well have taken six months to get the patient's weight reduced by 100 lbs. That wouldn't have been impossible, and then there could have been a safe operation and a final operation. As it was, the patient faced another operation. I do think, though, that the surgeon who had the temerity to operate on that man, and to bring him through it alive, deserves a medal.

A second thing, then, is that you must be very careful when you elect a patient to make sure he is in proper condition. Not only must the diagnosis be right, but you mustn't make the mistake of operating on a patient who is obese, one who is receiving antihypertensive drugs, one who is in poor nutrition, etc.

Most of our errors in the operating room are technical mistakes. Thus, too, the surgeon must be very careful. To those of you who aren't surgeons, that statement may sound trivial, but it isn't. Dr. Catell and Dr. Lahey pointed out that 80 per cent of all the patients with common-duct strictures at the Lahey Clinic had been operated upon through a sub-costal incision. The fact of the matter is that the sub-costal incision is a bad incision, not because it isn't high enough but because when one uses it he can't retract the abdominal wall. I know that many people use it. One of our most famous Chicago surgeons does all of his gallbladders through this incision, but one must remember that he has tremendous numbers of assistants, he is a man of incredible experience, and he is very cautious, basically, in his approach. But as a general rule, especially for the younger people, a sub-costal incision is a bad one because it isn't big enough and because it doesn't permit the surgeon to get to the cause of one of the sources of trouble, namely the common duct itself.

Second, what should we do in patients who have acute disease. This is the place where we must make the right decision. In a patient who has acute disease and in whom surgery is mandatory, one must really distinguish between a gallbladder emergency and a common-duct emergency, for they are usually quite separate. The patient with a gallbladder emergency basically and usually has a stone impacted in the cystic duct which has led to retention, empyema of the gallbladder, and perhaps even gangrene. Therefore, the surgeon's approach may very well be limited to the gallbladder itself, and the patient will survive the operation if the surgeon simply is sure that the gallbladder will be decompressed, and that he doesn't leave any necrotic material—a part of the gallbladder. For instance, if the patient is in a poor condition for any reason, or if the doctor isn't in a position to carry out a definitive operation, the patient can be closed and given the proper operation later. This disease is characterized mostly by pain, localized tenderness and sometimes a palpable mass;

and jaundice and chills and fever are not parts of this particular patient's picture. However, if the patient has an emergency common-duct disease, he has chills, fever and some jaundice, and nothing short of attack on the common duct itself is an adequate or safe operation. You can't expect to drain through the gallbladder safely, or in many cases satisfactorily, in patients who have suppurative cholangitis, with chills, because many of these people have sludge and stones that won't drain out well through the cystic duct, and they will persist in having symptoms. If there is any risk at all in these patients, the best thing, of course, is to drain the common duct—to be sure that the common duct is proximally drained to the liver—and get out.

As far as elective surgery is concerned, there are about three or four things to be mentioned. In the first place are adequate exposure and recognition of the positions of the arteries. The decision as to whether or not the patient needs common-duct surgery, or whether surgery should be limited to the biliary tract itself, can be made by comparing the size of the stones in the gallbladder with the size of the cystic duct, and the condition of the bile in the common duct. To this end one must know the condition of the bile in the common duct. Is it crystal clear? This can be decided in a straight gallbladder case simply by not clamping the proximal side of the cystic duct. One first cuts across the cystic duct, letting this bile flow to a white sponge for examination. After the gallbladder has been removed, the gallbladder can be opened and the size of the stones can be compared with the size of the cystic duct itself.

It is probably unwise to put T-tubes in very small common ducts. Only occasionally will there be a patient who has had jaundice and in whom there hasn't been dilatation of some sort in the common duct. Such a case may call for some actual operative consultation. If the common duct itself needs opening, most importantly we must be sure that there are no stones left in the common duct, and this usually can be done by a combination of scooping and probing—with the help of Dr. Wise and his cholangiograms. Second, we must be certain, when we have adequate decompression of the duct with the T-tube.

The question of what to do with the patient who has sludge in the common duct, in which there is inspissated, thick bile that doesn't flow but isn't particulate enough so that it can be dependably removed by instruments through the duct is a difficult one. Different people approach this differently. I must confess that as of now, in 1965, this is the place where I personally think that a sphincterotomy is the operation of choice. I'm sure that this statement of mine can very easily produce argument. One must remember, however, that bile which is chronically infected, with sediment material in it, is likely to cause recurrent symptoms, and this is one of the places where we are likely to get into trouble.

Dr. Glenn: Now if the young ladies will pick up those questions and bring them up, we'll get started on them.

Before we do, I want to make a comment or two. Dr. Capps has called attention to the problem of differential diagnosis in jaundice between hepatitis and biliary-tract disease. As he has said, conservatism is highly desirable. Very often, I find that with the complete cooperation of the surgeons and the medical people, we have to postpone it, perhaps, too long. I believe that one of the aids we have now is the percutaneous transhepatic cholangiogram. I'd like to show you two or three slides.

The first slide is a percutaneous cholangiogram of a patient with hepatitis. It shows, therefore, a normal ductal system. Next slide. This is a percutaneous cholangiogram in a patient with stricture of the common duct, postoperatively. The use of this type of examination is truly a surgical procedure. It is not to be done on an ambulatory basis, and we do it only in patients whom we schedule for operation. It is done under local anesthesia, in x-ray, with the aid of an image intensifier. In a patient who has an obstructed ductal system, the needle is put in, 15 to 20 cc of obstructed bile is allowed to flow out, and a similar amount of the opaque material is introduced. This is watched on the image intensifier. Its greatest use is to demonstrate a normal ductal system in those questionable cases where there is a hepatitis, or in a case of stone, it will show us that. It will also show us strictures such as you see here. It also demonstrates well the extrinsic pressure due to a carcinoma of the pancreas, and it will also outline very nicely the deformity that is characteristic of carcinoma of the common duct.

Next slide. Here is an example of a carcinoma of the common duct.

This type of examination is something that I believe will be of considerable use in the future.

Now for the questions. "How would you treat a 310 lb. woman with subsiding obstructive jaundice?" I think Dr. Capps is the man to answer that.

Dr. Capps: In order to reduce a woman who weighed as much as that, one would have to wait for a period of three or four months. If the obstructive jaundice is decreasing, I think one might at least start on a program of reduction, and if the jaundice continued to decrease, one would perhaps be justified in waiting for three or four months, although that's longer than you'd like to wait. Biliary cirrhosis can begin to develop within a period of six or eight weeks after an obstruction takes place, but it should be pointed out that biliary cirrhosis improves after the obstruction has been removed. We have seen patients who had cirrhosis at biopsy, who were treated surgically, and three

or four years later were biopsied, and we couldn't find any cirrhosis.

Dr. Glenn: Quite right. Have you any comment on the fat lady?

Dr. Reynolds: I'd like to ask a question. I'd like to know how you people feel about the length of time that obstructive jaundice may be allowed to continue without treatment. My reason for asking is that I have seen one patient in whom I took a black-silk suture from the common duct a year and three months after it had been carefully placed, and the patient did quite satisfactorily.

Dr. Puestow: I think that a patient with increasing jaundice should not be operated upon. This rule does not apply in all cases, but I think it is a pretty good one. If the jaundice is decreasing, the cause of the obstruction may have been relieved. If there is continued obstruction, jaundice will continue to increase to a certain height and then level off. At this stage or when the jaundice is decreasing, surgery is far safer than when jaundice is increasing. To operate upon a patient with increasing jaundice, especially if it is hepatogenous in origin, may result in the death of the patient.

Dr. Glenn: Dr. Wise, a question for you: "Do you do an intravenous cholangiogram after a failure of an oral cholecystogram?"

Dr. Wise: Yes, we do them with increasing regularity after failure with a single dose. I think our old technic, the so-called double-dose, is destined for oblivion. Now, I don't mean we do this in all cases. If we have a faintly opacified gallbladder, I think that a double dose may well be worth while, but generally speaking, I think that if we have complete failure after the first dose of oral cholecystographic medium, we should perform an intravenous cholangiogram.

Dr. Glenn: Dr. Capps, this is hardly surgical, but I can readily sympathize with the person who asked this question: "Would you briefly outline your management of a viral hepatitis?"

Dr. Capps: That's a pretty large order, but I'd say first that the most important single thing one can do is to keep the patient at rest until recovery is reasonably complete. Our experience in civilian life, since World War II, has been identical with our experience during the war years, in this regard, and we don't accept the work that has been done and the papers that have been published claiming to prove that getting the patients up and ambulating them actually cured them sooner. We think it's difficult to explain that particular conclusion, but in all probability during the Korean War the virus involved was of a different strain from the one we see in this country now and the one we saw during World War II. That is the most important single thing that one can do.

The only other items, ones that I'll just mention in passing, are that a high fluid intake is desirable, a good diet, as tolerated by the patient, is desirable, and it's very important not to use narcotics, laxatives, various sedatives, or any drug that might possibly damage the liver.

Dr. Glenn: Dr. Reynolds, I guess you asked for this one: "Do you operate on acute cholecystitis?"

Dr. Reynolds: I certainly do.

Dr. Glenn: How about you, Dr. Puestow?

Dr. Puestow: Yes, when it hasn't subsided under conservative management, and the symptoms are progressing.

Dr. Glenn: How long do you wait?

Dr. Puestow: Well, I'd rather let them become afebrile and watch them in the hospital, of course. Then, if there is no spread of their symptoms, if their temperature comes down and they improve, I'd rather wait a couple of weeks if I can. The ideal time would probably be six to eight weeks after the onset of the attack, but if one sends them home, they don't come back to be operated on; so I keep them as long as I can.

Dr. Reynolds: I agree entirely with what Dr. Puestow has said. I think the important thing is that if we do see the patient early and if his temperature stays up for 24 hours, he should be operated on. I think also that an occasional emergency case is a patient who is known to have stones and who has another colic. He should be operated upon immediately.

Dr. Glenn: These gentlemen are too conservative. I favor operation as soon as one makes the diagnosis, unless there is some contraindication and if the patient is as well prepared as possible. I believe in this, and I think it helps solve several problems.

I have another question here. Dr. Wise, "What are some of the complications following biliary-tract surgery that you discover?"

Dr. Wise: I gather that the questioner refers to complications that aren't clinically evident. I think we discover a significant number of them. For instance, when intravenous cholangiography first was invented, we found that we were actually visualizing surgical conditions in about 20 per cent of the patients examined. This rate has now dropped off rather dramatically, so that we are seeing surgical conditions in perhaps only 5 or 10 per cent, and I think the rate is probably closer to 5 per cent. The reason for this, I believe, is that we had, in our patient group, a large number who were being carried as functional problems. I think that many of these were subjected to intravenous cholangiography, and we began to pick up a great number of calculi, cystic-duct-remnant calculi, some stenoses of the sphincter, etc. These were all subclinical, so to speak. In that sense, I think we've picked up a great deal. As far as strictures are concerned, we think most of these are self-evident historically, by examination, etc. But there is an occasional stricture case that is borderline clinically and where the laboratory studies are equivocal, and we do pick up meaningful information with the intravenous cholangiogram.

Dr. Glenn: Dr. Capps, here is one that all of us are confronted with. I'll be much interested in hearing how you meet this question: "What do you do with the asymptomatic gallstone found in a patient during a general work-up?"

Dr. Capps: In the past, I'll admit, unless the individual was relatively young, I did not recommend removal. But the older I get the more impressed I am with the fact that if you don't call in a surgeon to remove the gallbladder and stone at an age when the patient is a good risk, you end up with a patient at 75 or 80 years of age who is having symptoms and who is such a poor risk that you don't care to operate on him. This is a problem that I've run into repeatedly. I recommend that the gallbladder be removed, if there is a stone, in anyone under 60, regardless of symptoms, provided that he is in good condition and you don't expect him to have a coronary in three or four years, or some other condition, particularly of the cardiovascular system; and in people between 60 and 70, I'm much inclined to recommend surgery.

One other point I'd like to make is that very often those people who are supposed to be asymptomatic really aren't asymptomatic. They don't admit that they have a constant, chronic heartburn or indigestion, though they have no severe attacks of pain. I think that they are the forgotten patients. An individual who has an attack of colic once a year can take some morphine or something else and be all right again in 24 hours, but these patients have something that they will live with if the doctor tells them to. They just don't realize how bad their symptoms are.

I remember a patient whom I saw at the age of 75. She was senile; she had gallstones; she admitted some symptomatology, but not very much. Five years later she had a common-duct stone, became jaundiced, and had to be operated upon. She came in to see me, four or five months after the surgery, and said, "I'm mad at you, and I'm not going to pay your bill. I didn't know how sick I was. I haven't felt this well for 30 years. You should have known how sick I was six years ago!"

Dr. Glenn: Dr. Puestow, this is an eminently fair question: "How do you know when there are stones in a cystic-duct remnant, and is it not true that cystic-duct remnants without stones cause no symptoms?"

Dr. Puestow: I cannot believe that, and I base my disbelief on quite a large series of patients from whom I've removed cystic-duct remnants and who have been relieved of their symptoms. I don't think they necessarily must contain stones for the patient to be symptomatic. If we don't adequately resect the cystic duct, we don't denervate the sphincter of Oddi, and the patient continues to have trouble. If we do the operation properly, the patient loses his sphincter tonus and is relieved of his symptoms.

Dr. Glenn: Dr. Reynolds, there must be somebody from Nashville here. "Why do you object to closing the common duct without drainage—i.e., without a T-tube?"

Dr. Reynolds: That question was once asked me during staff rounds at Presbyterian-St. Luke's by one of our English associates. We were talking about T-tubes, and I said that if I opened the common duct I always put a T-tube into it, being careful not to open a small one. He said that surgeons in England don't always close their common ducts and don't always put a T-tube in. There was a large crowd, and I didn't want to press him, since he was a visitor. But afterward I said to him, "Bryan, who are these surgeons who close common ducts without T-tubes?" He replied, "Not very good ones." He was trying to lead me on.

We have had patients who had bile peritonitis, and this, I certainly think, is a good way of avoiding it. It facilitates the patient's recovery. The patient can get well despite a bile leak if there is adequate drainage under the liver, and if you can put adequate sump drainage to encourage the flow of bile to the ouside until the duct heals, but I think the use of the T-tube is a much more facile way of doing it. Using the T-tube of course introduces a foreign body. The T-tube must be tested ahead of time to make sure that it's not going to break off. It must be so constructed that it can be removed. Dr. Puestow tells me that once in awhile he has trouble taking a T-tube out, but only once in a while. (This is a private joke.) I think this is a matter of providing drainage during the period of time in which you manipulate the sphincter. Actually the common surgical procedure of passing a probe through the ampulla, especially if the ampulla isn't very large, can produce enough trauma to cause edema for a few days, and can lead to retention of considerable bile in the common duct. The T-tube simply facilitates this flow until the edema disappears from the ampulla and the bile flow can resume its regular course.

Dr. Glenn: Do you concur or disagree, Dr. Puestow?

Dr. Puestow: I concur. If one adequately explores the common duct with instruments, after opening it, he always gets a certain amount of swelling and back pressure in the common duct. That is shown by the large amount of bile that drains during the first day or two.

Dr. Reynolds: Dr. Glenn, I think it is true, isn't it, that if you really examine your patients, you find that the common-duct cases, many times, have smoother postoperative courses than do the straight cholecystectomies. I think part of this can be accounted for by the fact that the bile is flowing so freely.

Dr. Glenn: That may be true sometimes, but in a long series I think the complications will be greater. I'm a great believer in the principle that if you are going to explore the common duct, you

should have specific indications—ones that convince you that there is a stone there—and you want to search for it very diligently. If you search diligently for a stone in the common duct, I'm sure you'll have spasm and swelling, and you'll have obstruction.

Now, there must be a surgeon in the audience: "Have there been any new developments in operative cholangiography?"

Dr. Wise: I think the only new development has been our rapid-filming technic. Two processes are in use now which I think are probably quite good. One is the Ansco and the other is the Polaroid. I think we have an enormous advantage here in that these films are actually quite good. They yield quite good resolution, and so on. It is permitting us to do operative cholangiography in areas and situations where perhaps the surgeon hasn't quite wanted to do it, where no one was quite willing to wait for what used to be the necessary five or 10 minutes, and so forth—i.e., for a repeat film. This is probably the only significant development that has come along.

I think—if we can go off into space a little bit—that it would be entirely possible with today's electronics in radiology, to develop almost continuous operative cholangiography, with minimal doses of radiation, and to do it far better. If someone would give me about half a million dollars, I'd love to equip an operating room for it. But I'm quite serious; I think this could be done with minimal amounts of radiation that would be quite safe for the surgeon and for the patient. We could probably today, develop almost continuous cholangiography, using memory tubes, television screens, etc.

Dr. Glenn: I'll help you get the $500,000, for I too believe this is important. One of the most important things that have happened in operative cholangiography, over the country, has been a closer association between the roentgenologist and the surgeon. There is a great tendency for the surgeon to be the roentgenologist, and this is sometimes a mistake. Where there is close cooperation between the roentgenologist and the surgeon, operative cholangiography is very productive. The people who want to throw it out entirely are those who have made mistakes.

Dr. Capps, "When do you do a needle biopsy of the liver?"

Dr. Capps: I think one should have definite indications for doing a needle biopsy. On the other hand, there are definite contraindications. In the latter group, I might mention that we don't believe in doing needle biopsies in patients who might have obstructive jaundice, and generally not in individuals who have very much jaundice. We also are very careful not to do needle biopsies in individuals who have prolonged prothrombin times or other bleeding tendencies.

One cannot make the diagnosis of cirrhosis except by needle biopsy. One can suspect it, but he can't really establish the diagnosis by any other means. In our opinion, it is a very valuable procedure, for it obviates the necessity for opening the abdomen. The surgeons don't always agree with us on this point, but if one observes the contraindications that I mentioned, he has very few failures, except that perhaps he doesn't get quite so good a specimen as by surgery. So we are interested principally in establishing the diagnosis of cirrhosis and occasionally the diagnosis of malignancy, fatty liver, hepatitis or hemochromatosis.

Dr. Glenn: I'll be the surgeon—the Devil's advocate. I think there are times when I should prefer, were I the patient, to have just a little operation, and have somebody take out a piece of liver. It that heresy?

Here's one for the panel: "What is the panel's feeling about choledochostomy for acute pancreatitis?"

Dr. Puestow: Acute pancreatitis is a rather dangerous disease to operate upon, and one wouldn't elect to go in to do a common-duct drainage for acute pancreatitis if he knew what the diagnosis was. However if, on a mistaken diagnosis, one does open the abdomen, if there is evidence of biliary-tract disease, certainly he should drain the common duct and possibly remove the gallbladder. If the biliary tract is perfectly normal, I don't believe the common-duct drainage does the pancreatitis any good.

Dr. Reynolds: I think Dr. Puestow's has been a very proper and safe observation. I think the patients who are going to die of pancreatitis are those in whom an extended operation is performed. So rarely would you find a patient with a stone impacted in the ampulla, in the face of acute pancreatitis, that there would be nothing gained by extending the operation to include a decompression of the common duct. In other words, the pancreatitis has occurred because of a spasm that has long since passed, and therefore the operation as an emergency to drain the common duct will not have the effect that it would if there had been obvious disease there.

Dr. Glenn: There's one other point I'd like to add. Be careful of the pancreas. Treat it with great respect. If your patient has pancreatitis, go easy on retraction at operation. I can speak from experience on that.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the JOURNAL, 529-36th Street, Des Moines, Iowa 50312.

Spontaneous Rupture of the Rectus Abdominis Muscle

JOHN L. BEATTIE, M.D.
Creston

Spontaneous rupture of the rectus abdominis muscle is a rare condition that presents considerable difficulty in diagnosis. Since the lesion is seldom seen, many physicians are unaware that it is possible. The Greeks recognized the symptoms in the fifth century B.C. Hippocrates and later Galen and Leonardo da Vinci[2] described the disorder. Yet it has been mistaken for every possible acute intraabdominal disease.[1]

In 1938 Payne[2] analyzed 165 cases which had been reported in the literature. Furste[3] analyzed an additional 85 cases. Fojalini[4] and Lucas[5] later reported three cases. Jones and Merendino[6] described four cases in 1962, making a total of approximately 257 cases reported to this date.

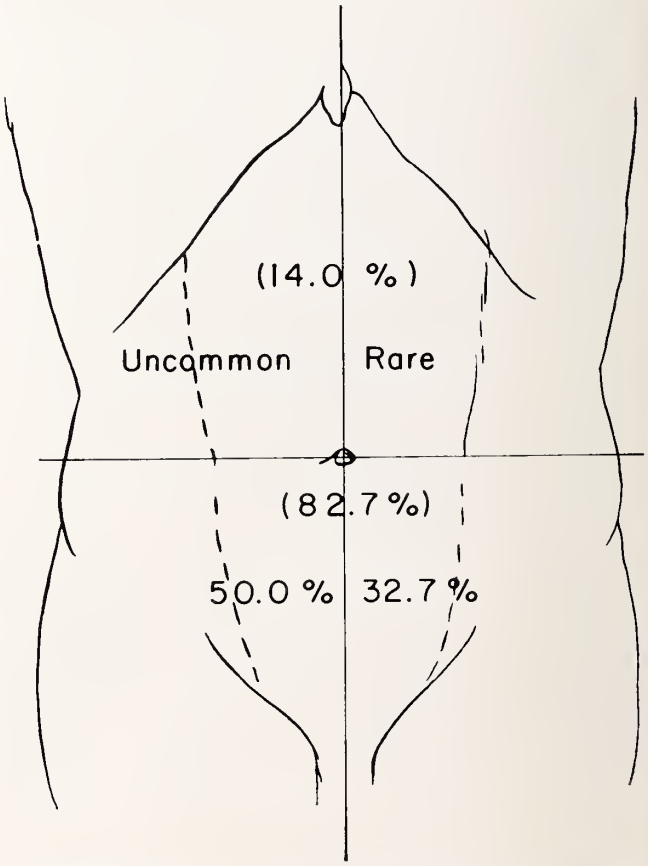
Certain anatomic aspects of the rectus muscle and its blood supply predispose to this condition. The distal portion of the muscle—between the symphysis pubis and the first tendinous inscription—contracts a greater distance than does any other of its parts. The distal segment is the narrowest, thickest and strongest. The deep inferior epigastric artery is especially tortuous in its lower portion. The posterior rectus sheath, which is derived from the external oblique, internal oblique and transversus abdominis muscles, is absent below the linea semicircularis Douglasii. It is in this lower abdominal area that the vessels are more easily torn, and there is no posterior sheath to limit the extent of the hemorrhage. As a result, the spreading of hemorrhage in this area may produce a catastrophic picture simulating an acute abdominal crisis.

Both the superior and the deep epigastric vessels can rupture. Jones and Merendino[6] showed that the majority of ruptures occur in the lower quadrant (Figure 1).

DIAGNOSIS

The patient, a 68-year-old white female, was admitted to the hospital on February 27, 1964, suffering severe abdominal pain localized in the right lower quadrant. She stated that the sudden onset of pain had awakened her at about 3:00 a.m. on the day of her admission. Her family physician had been called, and his physical examination revealed a rather frail white woman in severe distress. A small mass could be palpated in the right lower quadrant, measuring approximately 3 x 4 cm. There was marked right-rectus rigidity. Rebound tenderness was present. Auscultation revealed a "silent abdomen."

Surgical consultation was obtained at 8 a.m. on the day of admission. The mass, by that time, measured approximately 15 cm. in greatest diameter. A flat film of the abdomen was obtained, and it proved beyond a doubt that there was a mass in the right lower quadrant (Figure 2).



1. Frequency and sites of occurrence of rectus abdominis hematoma. (From Jones and Merindino.[6])

Except for the above-described abdominal findings, the physical examination was not remarkable. The patient's temperature was 99.4° F., and her heart and lungs were considered within normal limits. Pelvic examination confirmed the presence of a mass in the right lower quadrant. The extremities were negative. Laboratory work-up was inconclusive.

The following diagnoses were considered: ruptured appendiceal abscess, twisted ovarian cyst and perforation of a cecal diverticulum.

SURGERY

Surgery was performed on the morning of admission. A transverse incision was made over the mass in the right lower quadrant. The subcutaneous tissues over the mass were edematous. The edge of the rectus sheath was cut. A rather large clot extruded from that area. The incision was enlarged to transect the entire right lower anterior rectus sheath, and a large hematoma was evacuated. The fibers of the right rectus muscle were completely separated, and the divided ends of the deep epigastric artery and veins were identified. These were individually ligated. The peritoneum was diffusely infiltrated with blood, and it was opened. No intraperitoneal pathology was found except for several stones which were palpated within the gallbladder lumen. There were no other remarkable findings. A routine appendectomy was performed, and the incision was then closed in layers without drainage.

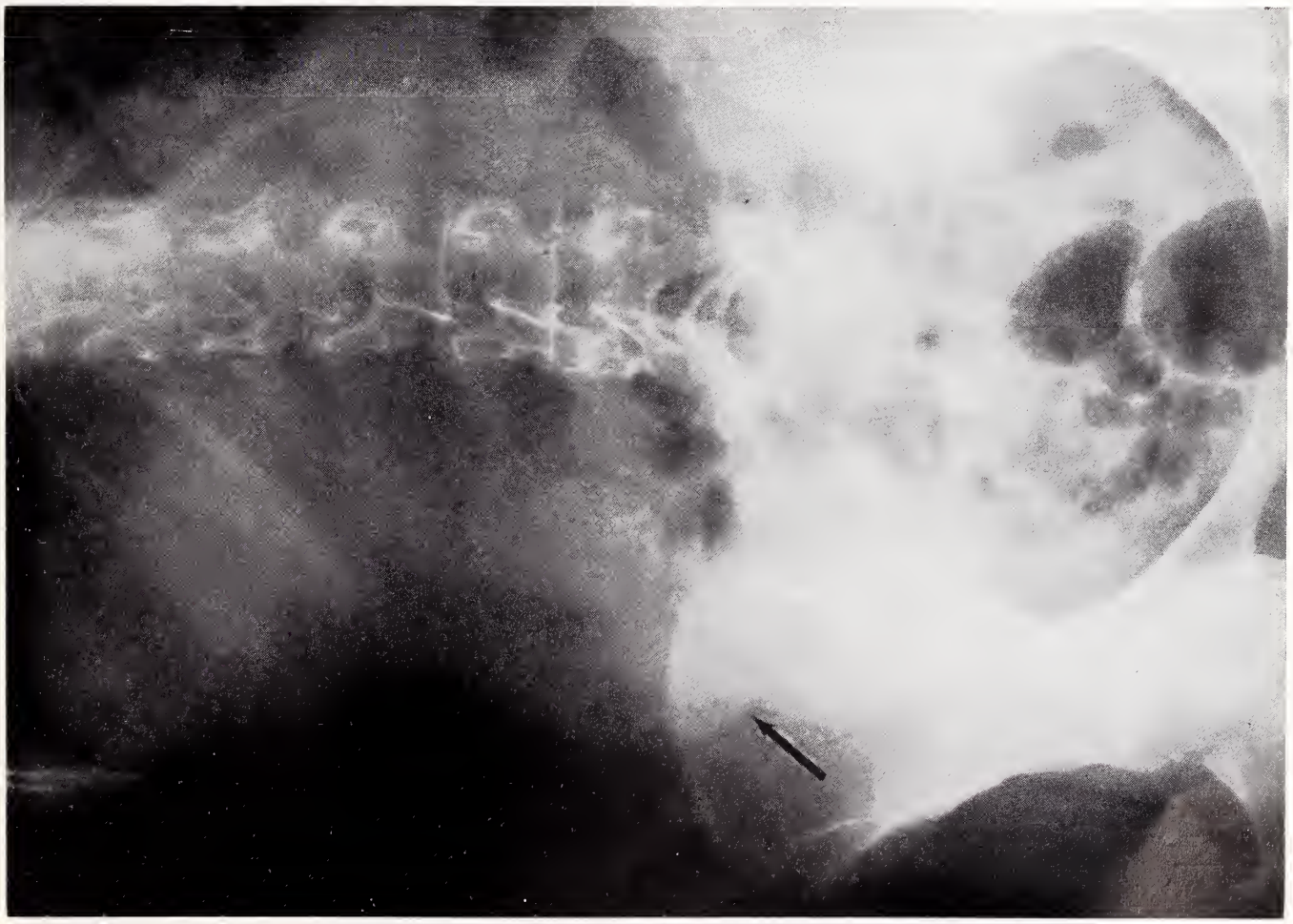
The patient tolerated the operative procedure well, and her postoperative convalescence was without incident. She was discharged on the seventh postoperative day.

COMMENTS

This was truly a case of spontaneous rupture of the rectus abdominis muscle. There were no predisposing etiologic factors such as trauma, pregnancy, ascites or violent muscular activity. It is possible that the patient may have had arteriosclerotic changes, but there was no apparent reason for this rupture.

The physical findings were well accounted for. The rapidly enlarging mass consisted of an accumulating hematoma. The signs of peritoneal irritation—right-rectus rigidity, rebound tenderness and "silent abdomen"—had been caused by the diffuse extravasation of blood into the peritoneum.

A flat film of the abdomen confirmed the presence of a mass. Celiotomy was indicated.



2. The hematoma in our patient is indicated by the arrow.

SUMMARY

A case of spontaneous rupture of the lower right rectus muscle has been presented. Routine flat films of the abdomen aided in early diagnosis. Celiotomy is required to diagnose and treat this condition.

REFERENCES

1. Schafer, C. S.: Rupture of rectus abdominis muscle and deep epigastric arteries. Am. J. Surg., **86**:157-160, (Aug.) 1953.

2. Payne, R. L.: Spontaneous rupture of superior and inferior epigastric arteries within rectus abdominis sheath. Ann. Surg., **108**:757-758, (Oct.) 1938.

3. Furste, W.: Hematoma of abdominal wall. Am. J. Surg., **91**:540-551, (Apr.) 1956.

4. Fojanini, G., and DiMatteo, G.: Ematomi spontanei della parete abdominale. Il Policlinico, **61**:1233-1240, (Sept.) 1954.

5. Lucas, W. E., and Baker, W. S., Jr.: Hematoma of rectus abdominis muscle simulating rupture of pregnant uterus. Am. J. Obst. & Gynec., **76**:1302-1305, (Dec.) 1958.

6. Jones, T. W., and Merendino, K. A.: Deep epigastric artery: rectus muscle syndrome. Am. J. Surg., **103**:159-169, (Feb.) 1962.

Congenital Pits of the Lower Lip Associated With Cleft Lip and Palate

A Case Report

WILLIAM H. OLIN, D.D.S., M.S.,
WILLIAM C. HUFFMAN, M.D., and
JAMES W. SCHWEIGER, D.D.S., M.S.
Iowa City

IN A PAPER on congenital malformations of the palate, face, and neck published in 1909, Sir Arthur Keith stated, "A bilateral cleft in the upper lip is frequently associated with a curious malformation of the lower lip in which two fistulae or recesses open on the lower labial surface opposite the clefts in the upper lip. The orifice of each recess may be raised into a nipple-like process, which when the mouth is shut, fits into the corresponding upper cleft."[2]

In 1938, Padgett[3] described congenital labial pits as one of the rarest anomalies of the human body. Davis,[4] in a review of one thousand cases of congenital malformations of the face, found 14 patients with mucous pits in the lower lip.

Pits or fissures of the lower lip are usually symmetrically placed, one on each side in the area of the lateral incisor, and they are one centimeter or more in depth. However the sinuses may have an asymmetric appearance, as can be seen in Figure 1. This can be due to the location of the pit or to the size of the opening. The pit may be single, and may occur either at one side of the midline or in the midline. The etiology is unknown, but the cause may have been an improper development at the mucocutaneous junction. The tract is lined by squamous-cell epithelium similar to that of the lip vermilion. Near the base of the pit are numerous mucous glands. Keith[2] surmised that the occurrence of such pits might be a reversion to the mucous glands which are normally found in the shark.

In August, 1959, a 49-year-old white male with a previously repaired bilateral cleft lip and an untreated complete bilateral cleft of the palate was

Figure 1A

Figure 1B

The authors are staff members in the Department of Otolaryngology and Maxillofacial Surgery at the College of Medicine, University of Iowa. This work was supported in part by NIH Grants M-1158 and D-853.

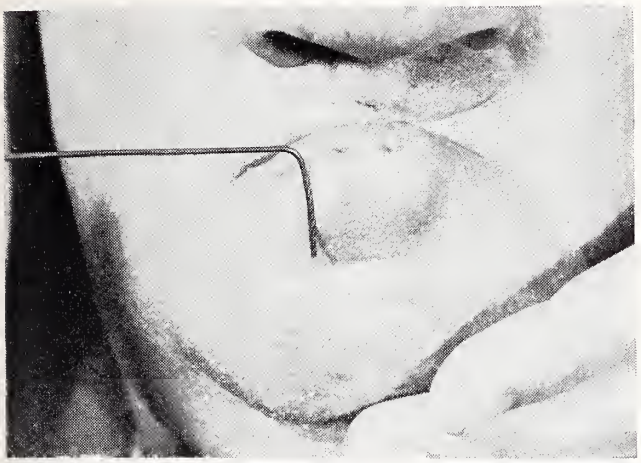


Figure 2A

Figure 2B

referred to our hospital for prosthetic treatment by his local dentist. Figure 2 shows the congenital pits found in the lower lip. Note the depth of these bilateral pits.

Further examination revealed a need for the extraction of several teeth in both the maxillary and the mandibular arches. It is our practice to preserve as many teeth as possible to serve as retention for the prosthesis. The upper lip was very tight, the lower lip was large and flabby, and the speech was poor. Figure 3 shows the front and side views.

Because the upper lip was tight, and the lower lip loose and protruding, an Abbe-Eslander flap from the lower to the upper lip was indicated. Prior to that procedure, however, it was desirable to excise the congenital pits of the lower lip. That surgery was carried out on November 3, 1959. The patient's postoperative course was uneventful, and the result was satisfactory.

On December 6, 1960, the first stage of the Abbe-Eslander operation was performed. A V-shaped flap of the upper lip connected to the columella was raised and advanced to allow projection of

Figure 3A

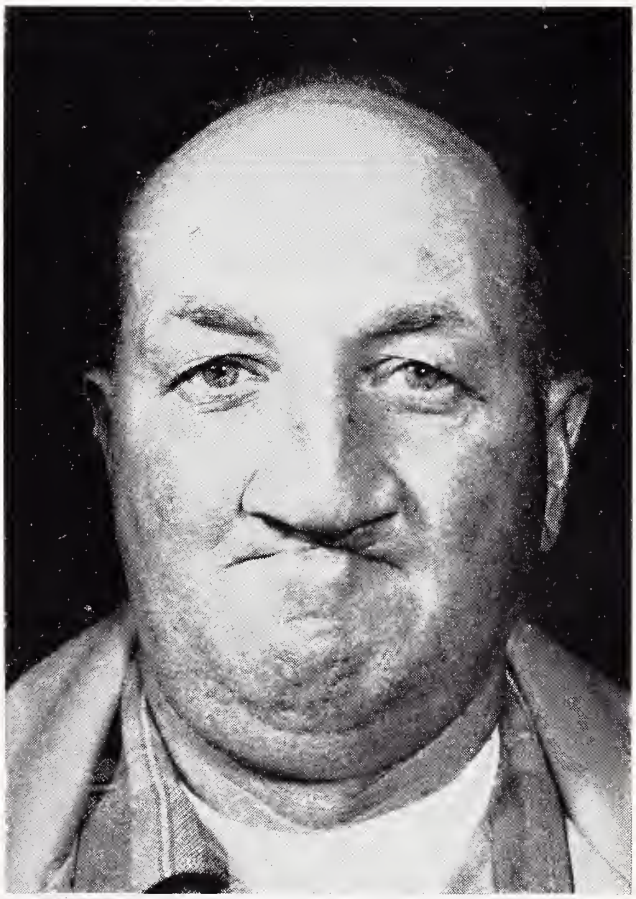


Figure 3B

the nasal tip, leaving a rectangular defect of the upper lip. A full-thickness flap, based on the right vermilion border of the lower lip with preservation of the coronary artery, was raised, rotated, and sutured into the defect in the upper lip. The postoperative course was uneventful, and the sutures were removed on the tenth day.

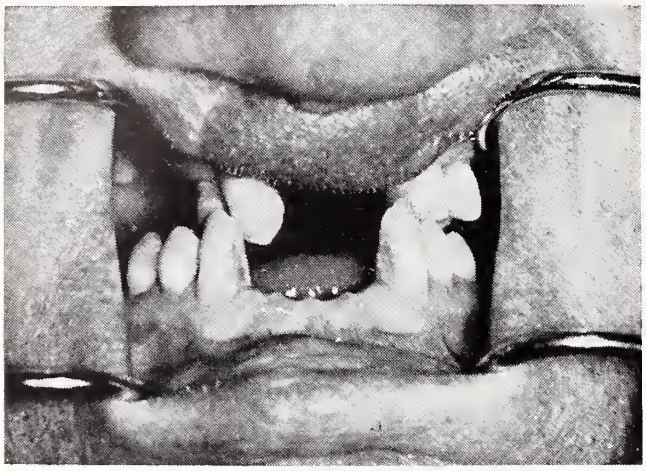


Figure 4

On January 20, 1961, the pedicle attachment of the Abbe flap was divided, and the tissues were adjusted to improve the appearance of both lips. Sutures were removed 10 days later by the patient's family physician.

In March, 1961, preliminary impressions were made for maxillary and mandibular prostheses. Previously, several teeth had been extracted. At

Figure 5A

Figure 5B

Figure 6A

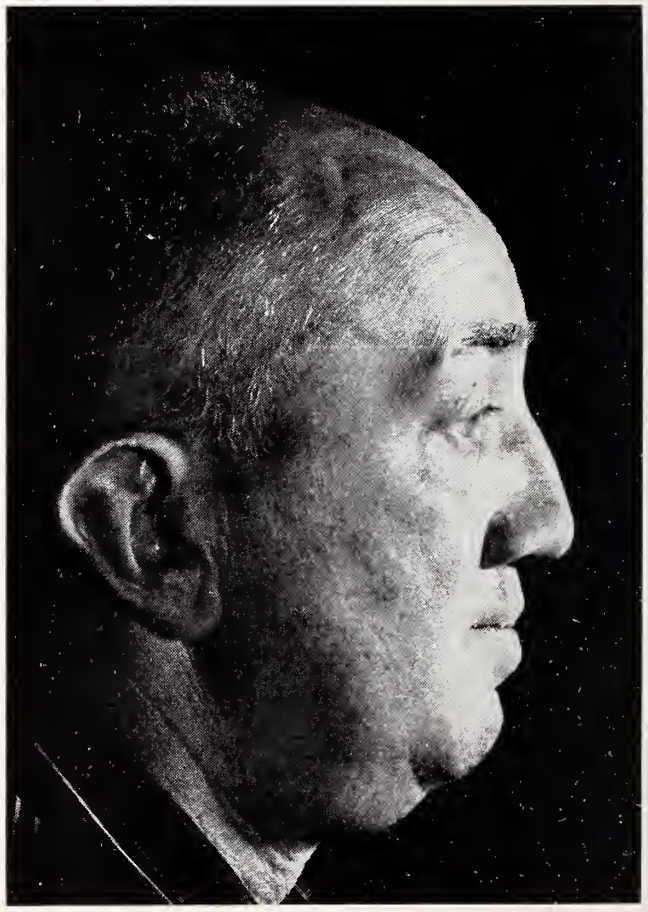


Figure 6B

the time of the impressions, there were four teeth remaining in the maxillary arch—the right canine and first premolar, and the left first and second premolars. Six teeth remained in the mandibular arch—the canine and the first and second premolars on both sides (Figure 4).

Final impressions were then made for both the maxillary and mandibular arches.

On March 31, 1961, the maxillary and mandibular prostheses were inserted, and the patient wore them for approximately eight weeks. Then an impression was made for the obturator, and the finished prosthesis and obdurator were inserted approximately one week later (Figure 5).

In April, 1962, cosmetic surgery to improve the upper and lower lips completed the treatment.

As can be seen from the photographs (Figure 6), a great improvement in facial esthetics and function resulted. Speech was also improved.

REFERENCES

1. Brophy, T. M.: Cleft Lip and Palate. Philadelphia, Blakiston and Co., 1923.
2. Keith, A.: Three demonstrations on congenital malformation of the palate, face, and neck; II. Congenital fistulae of the lower lip. Brit. Med. J., **2**:363-367, (Aug. 14) 1909.
3. Padgett, E. C.: Surgical Diseases of the Mouth and Jaws. Philadelphia, W. B. Saunders and Co., 1938.
4. Davis, W. B.: Congenital deformities of face: types found in series of 1,000 cases. Surg., Gyn., and Ob., **61**:201-209, (Aug.) 1935.

University of Iowa
College of Medicine

Clinical Pathologic Conference

CLINICAL SUMMARY

A 79-YEAR-OLD WHITE MALE was admitted to the University Hospitals with a two-month history of progressive decreases in the size and force of his urinary stream, associated with marked urinary frequency and nocturnal incontinence. The symptoms had been progressive, and two weeks prior to his admission they had culminated in an episode of acute urinary retention. His family physician had catheterized him, obtaining approximately 1,000 ml. of residual urine, and the patient had remained on catheter drainage until the time of his entrance into the hospital. The patient's urine had been grossly clear, and he had suffered no chills, fever, or flank pain. His general health was considered good.

On physical examination, the patient was well nourished and in no distress. The blood pressure was 140/78 mm. Hg, his pulse was 88/min. and regular, and he was afebrile. Examination of the chest revealed it to be relatively fixed, with an increased AP diameter. The breath sounds were distant. The heart was considered normal to percussion and auscultation. The abdomen was soft, and no masses were palpable. The penis was normal, and an indwelling urethral catheter was present. A left varicocele and a left inguinal hernia were present. The prostate was firm, was 1+ to 2+ enlarged, and felt benign. There was no peripheral edema.

Urinalysis revealed a specific gravity of 1.014, a pH of 5, albumin 1+ and sugar negative. Microscopic examination showed 20-30 white blood cells per highpower field. The admission hemoglobin was 10.1 Gm/100 ml., with 9,050 white blood cells/cu. mm. and a normal peripheral blood smear. The blood urea nitrogen was 45 mg. per cent, and the creatinine was 2.3 mg. per cent. PSP excretion was 35 per cent in the first hour and 45 per cent after two hours. The chest roentgenogram was interpreted as showing diffuse pulmonary emphysema. The intravenous urogram revealed bilateral, very faint, indeterminate function. A cystourethrogram was interpreted as showing a damaged bladder, with widening and anterior tilting of the prostatic urethra. The electrocardiogram was interpreted as abnormal, and an old anterolateral infarction could not be ruled out.

The patient was continued on catheter drainage, but despite a good fluid intake and urinary output, his blood urea nitrogen and creatinine levels did not change. He received two units of whole blood, and on his fifteenth hospital day a transurethral prostatectomy was performed. Thirteen grams of benign-appearing tissue was removed. At the time of operation there was a question of prostatic capsular spreading, and the operation was terminated early. Postoperatively, he received 1,000 ml. of Mannitol intravenously.

On the afternoon of surgery, the patient chilled, his temperature rose to 102.4° F., and the catheter drainage became bloody. He received intramuscular tetracycline and chloramphenicol, and by the first postoperative day he was afebrile and the urine was clear. Except for a temperature rise to 102.2° F. on the second postoperative day, his course was satisfactory. The chloramphenicol was stopped on the seventh postoperative day.

On the eighth postoperative day the patient

strained vigorously while attempting to have a bowel movement, and very brisk bleeding began from the prostatic fossa. The catheter was obstructed many times by clots, and required vigorous irrigation to keep it open. The bleeding stopped within 12 hours. However, the patient required two units of whole blood to replace the loss. He was started on oxytetracycline hydrochloride (Terramycin) intravenously. The following day his hemoglobin level was 12.4 Gm/100 ml. He spiked a temperature to 102.6° F. on that day, became nauseated, and vomited bloody material. He was placed on nasogastric suction overnight, and the gastric contents cleared in this period. He was then fed a bland diet. He was noted to be irritable. The blood urea nitrogen level was 100 and the creatinine 4.0 mg. per cent. Serum electrolytes on that date were: sodium 130 mEq/L, carbon dioxide 12.1 mEq/L, potassium 4.5 mEq/L, and chloride 103 mEq/L.

He seemed to improve for several days, and had no fever, clear urine, and a fair oral intake supplemented by intravenous feedings. However, on the twelfth postoperative day severe diarrhea began, with a temperature rise to 102.8° F. Novobiocin (Albamycin) was started intramuscularly, and the Terramycin was stopped. A stool culture was negative for pathogens. Penicillin was started. On the following day Albamycin was stopped, and nitrofurantoin (Furadantin) was started intravenously. He became lethargic, he would not eat, and his blood urea nitrogen rose further to 150 mg. per cent. The white blood count was 46,000/cu. mm.

The following day, the diarrhea subsided. On that date, while the patient's son was rubbing his legs, he had a sudden onset of tachypnea, cyanosis and unresponsiveness. Examination revealed atrial fibrillation and basilar rales. His temperature rose to 104° F. Nasal oxygen brought some improvement in his color and responsiveness. A chest roentgenogram at that time was interpreted as suggesting a linear infiltrate in the left base. Blood and urine cultures grew E. coli sensitive to chloramphenicol, colistin, and Furadantin. The patient's course continued downhill. On the sixteenth postoperative day he was completely unresponsive, and Cheyne-Stokes respirations were noted. There was no evidence of congestive heart failure, but because of persistent tachycardia, he was digitalized. His temperature rose to 104° F. again on the seventeenth postoperative day, and he became comatose and expired.

CLINICAL DISCUSSION

Dr. D. S. Longnecker, Pathology: Mr. Jack Lane has been designated by his fellow students to present their diagnoses.

Mr. J. Lane, junior ward clerk: We feel that this elderly gentleman had an enlarged prostate gland, and developed pyelonephritis secondary to an obstructive uropathy and prolonged catheter drainage.

Upon his entrance into the hospital for surgery, signs of impaired renal function were apparent. Following the operation, his course was not too significant until the episode of brisk bleeding from the prostatic fossa on the eighth postoperative day. From that point on, his course was progressively downhill because of the pernicious effects of uremia, septicemia, and pulmonary embolism.

We regard uremia and septicemia as the factors that determined the course of this patient. Evidence for septicemia consists of the continued temperature elevation and the elevated white count. We propose pyelonephritis as the predisposing factor for the uremia because of the obstructive uropathy and the entering urinalysis which indicated a urinary-tract infection. Also, the two-week course of catheter drainage prior to admission suggests a portal of entry for pathogens. The absence of the classical symptoms of chills, fever, and flank pain is disregarded, because some authors have observed that in pyelonephritis the absence of these symptoms is the rule rather than the exception. Of the other two most common causes of uremia, we dismissed glomerulonephritis because of the lack of a suggestive history, and we dismissed nephrosclerosis on the basis of no history or evidence of malignant hypertension. For a pulmonary embolism, the textbook description is "sudden onset of tachypnea, cyanosis, and unresponsiveness," followed by atrial fibrillation and basilar rales, and a chest x-ray suggesting a linear infiltrate. The protocol suggests that digitalization, since this patient was not in heart failure, may have been instrumental in his death, but we doubt this possibility because the digitalis effect may have been counteracted by what was probably a rising potassium level at that time. The antibiotic therapy instituted in this patient seems to have been a bit vague and haphazard. We question the use of novobiocin unless a staph enterocolitis or proteus infection was suspected, and no cultures are available to suggest either.

We expect that the pathologists will report many diffuse findings consistent with our clinical diagnosis of pyelonephritis, uremia and septicemia.

Dr. Longnecker: Thank you. Dr. Bunge, of the Department of Urology, will discuss the clinical aspects of the case.

Dr. R. G. Bunge, Urology: One thing we should note in the history is the duration of the patient's condition. A history of bladder-neck obstruction of two-months' duration would almost immediately suggest carcinoma of the prostatic gland. In contrast to such a short history terminating in complete urinary retention, that associated with benign enlargement tends to be cyclic. That is, it is worse in the winter and better in the summer and may extend over a considerable period of time. By a considerable period, I mean 10 to 12 years. However, in considering symptomatology, we must be cognizant of the fact that a certain awareness on the patient's part is implied. Though he may have had some symptoms referable to his bladder-neck obstruction, perhaps he minimized them. This possibility was borne out in the roentgen findings by compensatory changes in the bladder, and in the physical examination, by the presence of

a hernia. Very often, elderly men develop hernias because they have difficulty in voiding. May we see the roentgenograms, please?

Dr. J. T. Keller, Radiology: The intravenous pyelogram shows bilateral function, but the kidney detail is not good. The bladder is not well demonstrated, and a catheter is present. With the bladder filled with contrast material, there is considerable trabeculation and some cellule formation indicating a long-standing obstruction. An air contrast film of the bladder in an oblique position shows a filling defect of the bladder neck occasioned by an enlarged prostate. With the contrast material in the urethra and in the bladder, there is a filling defect of the bladder neck and an elongation of the prostatic urethra indicating prostatic enlargement.

Audience: Were the long bones all right?

Dr. Keller: Yes.

Dr. Bunge: From the roentgen viewpoint, of course, these findings are compatible with a benign prostatic enlargement and compensatory changes in the bladder wall. I believe there is agreement here in the examination of the chest and in the roentgenogram showing diffuse pulmonary emphysema.

In the laboratory analysis there was nothing too revealing. The hemoglobin was slightly depressed, perhaps due to uremia. The blood urea nitrogen and the creatinine were certainly elevated, indicating a minor difficulty with renal function. The PSP, likewise, showed some depression in the excretion of the material. But one must always remember that in a patient with an indwelling catheter, and especially in a patient who has a prostatic enlargement, failure to irrigate the bladder may result in an erroneous determination. This was especially true here, for we saw the anterior tilting of the urethra and the tip of the catheter lying in the superior position, and if the patient is prone there is a certain amount of residuum in the bladder. But there is compatibility here between the elevated BUN and the decrease in PSP excretion.

I must take the electrocardiograph findings as they were given, and I am in no position to discuss whether an old anterolateral infarction could be ruled in or out. But we have a patient 79 years of age who had been coasting along pretty well. He had been compensated, but his urinary tract had been working sporadically, and then some things began to happen. He developed an acute urinary retention. Of course, as the students have pointed out, there was a splendid avenue for infection to the bladder. But we must account for the fact that even though he had prolonged catheter drainage, there was no improvement in his blood urea nitrogen. This means there had been considerable irreversible damage to the kidneys. It might be explained on the basis both of nephrosclerosis and hydrostatic back-pressure. It is our usual practice with patients who have elevated BUN, to institute prolonged catheter drainage and see whether an improvement occurs. In this case, no improvement occurred, so the surgeon came upon the scene.

The significant point regarding the surgery is that the procedure was terminated because of the possibility that the capsule of the prostatic gland had been entered. It is wise to stop operating at that point for several reasons: (1) It is difficult to control the hemorrhage, and no amount of coagulation will help in this situation. (2) There is great danger that irrigating fluid will enter the circulation. (3) So much of the fluid may enter the circulation that a tremendous fluid overload may occur. So in these circumstances, the better part of valor is to terminate the procedure.

There was nothing in the immediate postoperative course to suggest that this patient was in difficulty, but he probably did have a transient bacteremia. In the late 1930's we did blood cultures on all patients who had had transurethral operations, and they did have positive cultures which became negative. Any febrile reactions here may be accounted for on that basis. But the real problem began when he strained at the stool and again got into difficulty with bleeding from the prostatic urethra. Now just imagine the high pressure that is building up in the bladder, and at the broken-down, infected prostatic fossa, and what it means to strain against the latter. Again, infected material may flood into the circulation. And I must say that he was swimming in a sea of antibiotic therapy.

We are told nothing about the patient's urinary output or the specific gravities. We are told, however, that he had an episode of vomiting which included some bloody material, and I should innocently suspect that it was on the basis of uremia, although I am a little disturbed by the fact that it cleared so rapidly. However, the blood urea nitrogen continued to rise, and there was some disturbance in the carbon-dioxide combining power. He became acidotic, as would be expected in the course of an unimproving uremia.

Then a red herring is drawn across the page—the severe diarrhea. Whether it was due to a flooding of antibiotics and a change in the intestinal flora, I don't know, although I must accept the report that the stool culture was negative for pathogens. When I read, "the patient's son was rubbing his legs," I wondered why. Were the patient's legs cold, was he complaining of pain, or just what was the reason? We have no answer. The situation was ideal for the dislodgement of an embolus, and the subsequent events strongly suggest such a lesion.

As for the use of digitalis for a tachycardia, I don't know. It seems rather queer to me, and perhaps one of the internists will comment on it.

I believe the primary cause of death was renal failure, probably nephrosclerosis with a certain amount of hydronephrosis and perhaps severe pyelonephritis superimposed. I should suspect that the patient might perhaps very well have had lesions representing pulmonary edema, and I hope that the pathologist will tell us the nature of the tissue that was resected.

Dr. H. E. Hamilton, Internal Medicine: Dr. Bunge, do you think the terminal episode was due to a pulmonary embolus?

Dr. Bunge: That is a point which bothers me. The patient did have a rather high elevation of blood urea nitrogen, but goodness knows I wouldn't want to say that it was the cause of his death. I want to know why he was digitalized for tachycardia.

Dr. Longnecker: We shall defer your last question until the discussion period, and present the autopsy findings at this time.

The basic disease process was, indeed, hyperplasia of the prostate. That was the diagnosis on surgically-resected material. There was evidence of severe chronic urinary obstruction. We found evidence of trabeculation and hypertrophy in the bladder. There was also well-developed hydronephrosis and hydroureter bilaterally. Chronic pyelonephritis apparently had developed secondary to the chronic obstruction, and in addition there was a severe acute pyelonephritis, unilateral on the left.

On gross examination, the right kidney had a greatly dilated pelvis and dilated calyces. There was marked atrophy of the renal parenchyma. The surface exhibited extensive scarring which we ascribed to chronic pyelonephritis. Histologically, the right kidney showed diffuse interstitial fibrosis and leukocytic infiltration together with dilatation of the tubules. These we regarded as manifestations of the hydronephrosis and pyelonephritis. Individual glomeruli showed fibrosis and capsular thickening. The left kidney displayed a hydronephrosis and a hydroureter which were less severe than on the right. There was a bit less atrophy of the renal parenchyma, and there were multiple abscesses. Individual tubules contained numerous leukocytes. There also was purulent exudate in many of the glomerular spaces. In more severely involved areas, the renal architecture was obscured because of the intense inflammation.

We shall now turn our attention to the possible source of this severe acute infection. In the prostatic bed at the area of surgical resection, there was a surface layer of necrotic tissue. Deep in this there was an area of intense leukocytic infiltration. In this general area there were numerous bacterial colonies, and similar bacterial colonies were identified microscopically in the left kidney and other organs, including the adrenal gland and bone marrow. These latter two sites are very uncommon locations for the postmortem growth of bacteria, and constitute good evidence for circulating bacteria during the terminal period. We cultured E. coli from blood, spleen, lungs and kidney, and regard it as the significant organism.

A review of the temperature curve during the postoperative period shows that there was a febrile course following the episode of hemorrhage from the prostatic bed. We propose that infection was established in the prostate gland at the time of resection or during the postoperative period, and that it was a source from which infection subsequently spread to the kidneys, either through the dilated ureters or hematogenously. We believe that septicemia was a major complication, and that the bacteria in the prostatic bed or the kidney could have been the source for a seeding of the bloodstream. Our autopsy BUN was 135 mg. per cent. During the late course clinically, levels up to 150 mg. per cent had been recorded. I think the renal failure has to be ascribed to infection, and the death of the patient should be attributed primarily to the infection.

There are a couple of negatives which we should mention. At the time of autopsy we were aware of the leg-massaging episode; therefore, we were on the lookout for pulmonary thromboemboli, but found none. We had a look at the gastrointestinal tract, in searching for an explanation for the episode of gastrointestinal bleeding, and found only multiple small foci of recent hemorrhage in the gastric mucosa and terminal ileum. We found no evidence of continued significant bleeding in the GI tract, and no evidence of ulcer. We have no findings in the colon pertinent to the episode of diarrhea.

In summary, as has already been outlined, this case was largely one of chronic urinary obstruction. An operation to relieve the obstruction was complicated by a severe infection involving the kidneys, and then by septicemia.

Dr. I. M. Smith, Internal Medicine: The slides of the kidneys show the changes of pyelonephritis in the tubules, but no peri-glomerular fibrosis. Do they help in dating the condition?

Dr. Longnecker: Glomerular fibrosis was evident primarily in the right kidney. The number of hyalinized glomeruli was relatively small. I suppose we could say that the pyelonephritis was of of no more than several months' duration. The weight of the right kidney, just 120 Gm., would reflect only a moderate degree of atrophy. I agree with Dr. Bunge that the total course of this patient's urinary obstruction was probably longer than the two months to which he admitted. His hydronephrosis and hydroureter were very severe.

Dr. D. A. Culp, Urology: Don't you think that grossly the outline of the kidney was quite irregular?

Dr. Longnecker: Yes.

Dr. Culp: And that the change could not have occurred during the period of time when the pyelonephritis was acute?

Dr. Longnecker: Yes, I would agree.

Dr. Culp: In other words, he had had some previous damage and scarring in his kidneys as a result of some previous disease?

Dr. Longnecker: Yes, we made separate diagnoses of chronic pyelonephritis and acute pyelonephritis. We feel that both of these were present, and we are not describing the same process by the two diagnoses.

Dr. Bunge: And there wasn't any acute tubular degeneration?

Dr. Longnecker: That's correct.

Dr. S. E. Ziffren, Surgery: Did you find evidence of a myocardial infarct?

Dr. Longnecker: There was no evidence of either an old or a recent myocardial infarct, and I think the explanation is that there was some sort of artifact on the EKG.

Dr. W. E. Connor, Internal Medicine: How large was his heart?

Dr. Longnecker: 400 grams. That was a normal weight for this rather large man.

Dr. Bunge, this appeared to us to be a rather severe infection in the prostatic bed. Would you regard this as a usual event or as an unusual situation?

Dr. Bunge: Following transurethral resection, every prostatic fossa will present first an area of necrotic tissue allied with a layer of bacteria and considerable inflammatory exudate, and in this particular situation it was to be expected. However, the infection in the prostatic fossa was not enough to explain the septicemia. Again I want to point out that high intravesical pressure against a blocked urethra forced bacteria into the periprostatic vascular plexus and forced an entrance for them into the circulation. Here, of course, we are always confronted with removing a catheter. We have operated upon a patient with a prostatic enlargement, and to remove the catheter and then let him void constitutes a touchy episode. Will the great intravesical pressure be transmitted to the prostatic fossa and squeeze a whole horde of organisms out into his blood stream? Fortunately, this does not usually happen. Yet the lesions which you described in the prostatic fossa are quite what I should expect under these circumstances.

Did you find any close relationship between the periprostatic plexus and the area of inflammation and infection?

Dr. Longnecker: No, I don't believe that we can say there was a close relationship between the site of infection and the surrounding vascular plexus. There was a thrombus in one of the periprostatic veins which could reflect thrombophlebitis resulting from extension of infection. However, it is a relatively common incidental finding at autopsy in patients who have not had recent prostatic surgery.

Do you regard the "multiple, vigorous irrigations" as significant in spreading organisms to the blood stream or to the kidney?

Dr. Bunge: Let's visualize for a moment the nature of the catheter and its position in the postoperative patient. The bag is usually filled with 30-40 cc. of fluid and is drawn down to the neck of the bladder rather than into the prostatic fossa. This creates an area of relative isolation limited inferiorly by the external sphincter, and then the lesion is actually confined within the prostatic fossa. If irrigation is carried on under these circumstances, it is highly unlikely that any increase in pressure will occur in the prostatic fossa. However, if a straight catheter is used, one can see that the transmission of pressure could easily be accomplished. Since the patient was getting along quite well and then suddenly a hemorrhage erupted, I think the vigorous irrigations did aid in spreading the organisms.

Dr. Culp: More than likely, under the situations in which these vigorous irrigations were carried out, there may not have been an inflation of the bag. Since this was postoperative bleeding, the catheter might even have been a metal one. I'm not sure whether it was or not. Under those circumstances, if the barrier had been broken down and there had been a hole in the prostatic capsule, then certainly the vigorous irrigations would probably have played a part in what amounted to a second inoculation of organisms, the first having occurred at the time of the operative procedure itself.

Dr. Bunge: I agree with that.

Dr. Culp: The other point which I wanted to verify was that you mentioned only transurethral prostatectomy. Will this same process in the prostatic fossa occur after any prostatectomy?

Dr. Bunge: Except for the layer of coagulated tissue.

Dr. Culp: What I wanted to emphasize is that such a wound is not a clean one in the same sense as other surgical wounds. It never is.

Dr. Bunge: That's right.

Dr. Longnecker: Now we've attributed some additional significance to the episode of hemorrhage in that it perhaps necessitated a maneuver which spread the infection—i.e., vigorous irrigation of the bladder.

Has either Dr. Bunge or Dr. Culp an explanation for the hemorrhage?

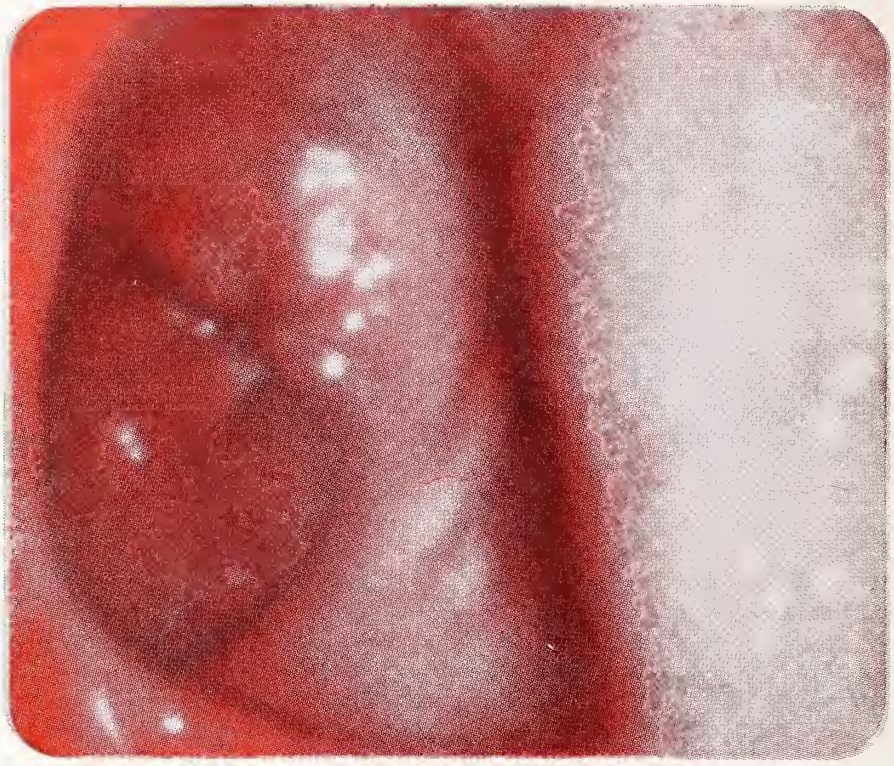
Dr. Bunge: The hemorrhage is most likely to occur on the eighth or ninth postoperative day, when sloughing of necrotic tissue from the prostatic fossa is maximum and a highly vascular base of inflammation is exposed. I think this fits quite well with that observation.

Dr. Culp: Since there was an entrance into the large prostatic veins at the time of operation, we can explain the initial hemorrhage. But there are times when we can't explain the secondary hemorrhage on just these points. There has been some work postulating the release of a proteolytic enzyme, a fibrinolysin type of material, not only in cancer of the prostate but also in any manipulation of prostatic tissue, even in prostatic hyperplasia. This may sometimes play a part in hemorrhage, but I think this one can be explained primarily on a basis of the traumatic surgical procedure.

Dr. Longnecker: In addition to the prostatic hemorrhage, which it seems can be explained on the basis of local factors, there was bleeding from the stomach, and our additional autopsy findings were of recent hemorrhage in the gastric and ileal mucosa, and of some scattered ecchymotic hemorrhages in the skin. Dr. Hoak, do these fit any pattern of specific clotting deficiency?

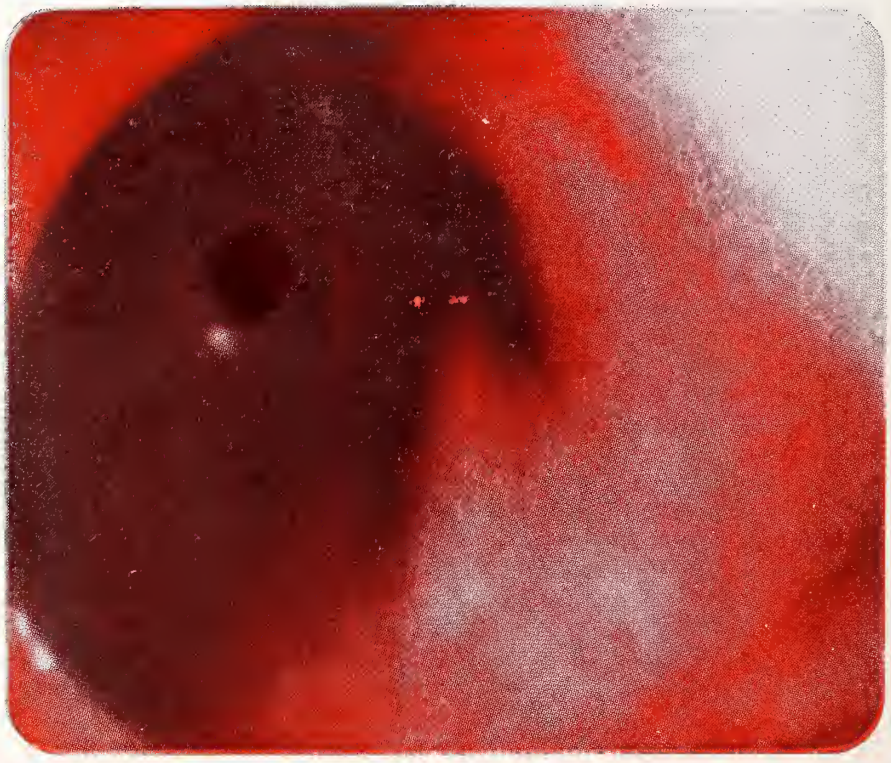
Dr. J. C. Hoak, Internal Medicine: I don't think one needs to postulate a specific clotting deficiency, but there are several points that might be mentioned as possible causes for this man's bleeding.

Intragastric photography studies[1]



A/ E. B., male, age 48. Normal antral contraction. Pyloric opening is not seen. It is difficult to differentiate a deep prepyloric contraction from a "pyloric fleurette" or true pylorus.

B/ Same subject after 6 mg. of propantheline bromide intravenously; antral contractions ceased. The pyloric orifice remained open and was easily identified. Better visualization of the antrum was also obtained.



Now you can see Pro-Banthine® at work
(propantheline bromide)

Pro-Banthīne is so effective in anticholinergic action that it may be employed in visualizing the entire pyloric region.

In addition to the intragastric photographs, cinegastroscopic studies[2] have demonstrated graphically not only its effectiveness but the superiority of Pro-Banthīne over belladonna alkaloids.

Pro-Banthīne produced complete cessation of gastric, antral and pyloric motor activity with a dose of 6 mg. intravenously. This is approximately one-third the usual oral dose of 15 mg.

Atropine at full normal dosages did not produce such cessation. It required double the usual oral dose of atropine, 0.8 mg. intravenously, to duplicate the aperistaltic action of Pro-Banthīne. This dose of atropine produced pronounced discomfort and tachycardia with ventricular rates as high as 150 per minute.

It is this pharmacologic superiority of Pro-Banthīne which has made it the most widely prescribed anticholinergic in such conditions as peptic ulcer, functional hypermotility, irritable colon, pylorospasm and biliary dyskinesia.

Dosage—The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15 mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily.

Side Effects and Contraindications—Urinary hesitancy, xerostomia, mydriasis and, theoretically, a curare-like action may occur. The drug is contraindicated in patients with glaucoma or severe cardiac disease.

Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type ampuls of 30 mg.

1. Barowsky, H.; Greene, L., and Bennett, R.: Investigators' Clinical Report. Photographs courtesy of Drs. H. Barowsky, L. Greene and R. Bennett.
2. Barowsky, H.; Greene, L., and Paulo, D.: Paper read at Meeting of American Society for Gastrointestinal Endoscopy, Montreal, Canada, May 25-27, 1965.

SEARLE

Research in the Service of Medicine

First is the point that Dr. Culp brought out, namely that organs in the urinary tract are very rich in urokinase, an enzyme which activates the fibrinolytic system. While it might not have been the cause of his bleeding, it probably kept the bleeding going and aggravated the situation. The other possibility would be the bleeding associated with uremia. We know now that platelet dysfunction due to a quantitative, or more often a qualitative, defect does occur in patients with uremia. In addition, I should also mention that bleeding into the gastrointestinal tract due to local factors seems to be a fairly common finding in a patient who is severely ill. A more remote possibility would be the development of disseminated intravascular thrombosis as a result of a release of endotoxin due to the septicemia. This could result in secondary bleeding due to depletion of clotting factors and thrombocytopenia.

Dr. Longnecker: Are there any other questions related to the bleeding problem?

Dr. E. L. DeGowin, Internal Medicine: I should like to ask whether epsilon aminocaproic acid has ever been used for this type of problem?

Dr. Culp: I can't recall that it was ever used after a prostatectomy for benign hyperplasia of the prostate. Our primary use for that material here has been in patients with adenocarcinoma of the prostate. In fact, we now have a patient who has some ecchymotic areas and some bleeding and who we think has a carcinoma of the prostate on the basis of a rectal examination. He is to be considered for treatment with epsilon aminocaproic acid before the start of an operative procedure. But I can't recall its use after a simple prostatectomy.

Dr. DeGowin: I was wondering whether there were other possible applications of that drug in urology.

Dr. Culp: It has been used in this way in other institutions. As long as we have an explanation, as we did for this man's hemorrhage, we would not be likely to use it. In other words, when there has been a known penetration of a vascular bed, we probably would not use this drug.

Dr. Longnecker: From time to time at CPC's, our ability to culture the significant organisms at autopsy is questioned. I thus take reasonable pride in the fact that in this case we cultured the same organism from four sites, and in two of the sites it was the only organism which we cultured.

I should like Dr. Smith to comment on the significance of E. coli in this case.

Dr. Smith: At autopsy it is a difficult problem to decide what organisms were significant and what were not. Dr. Max Jones and I have been interested in this problem, and have studied the autopsy reports from quite a number of years. The figures in Table 1 show that E. coli was a fairly prevalent pathogen throughout the years 1930-1959. "Pure cultures" means only one organism, or the same organism from two or more sites. You will note that from 1947 to 1953 hemolytic Staphylococcus aureus had a period when it seemed that it was going to disappear, but it recently has reasserted itself. The other gram-positive cocci are disappearing, but right now nobody can say whether they will reappear again or not. E. coli, you see, has been fairly constant, although there was a little reduction here because the autopsies for 1930 were about 300, and the figure for 1959 was, I think, about 550. Nonetheless, E. coli remains a problem. Other gram-negative rods are now taking over and are more important than anything else. These are primarily Pseudomonas aeruginosa and the Proteus species. The data shown are from patients in whom two or more cultures from two different areas grew the same organism, and we didn't get a whole lot of organisms suggesting invasion of the body postmortem. So E. coli is quite important, but I can't help you as regards how to decide at autopsy whether it's a real pathogen or not. We felt it was real when the organism grew in fairly pure culture from two or more places.

TABLE I

RELATIVE NUMBER PURE CULTURES BY YEAR, U. OF I. HOSPITALS

Year	1930	'35	'41	'47	'51	'53	'55	'57	'59
Staphylococcus aureus	33	29	34	8	8	9	22	31	45
Other gram-positive cocci	41	46	29	23	10	6	8	6	5
E. coli	20	34	21	13	20	9	12	17	17
Other gram-negative rods	3	24	10	27	22	16	50	50	53

In regard to the question of pulmonary embolism, there are a number of papers in the literature on how to tell septic shock from pulmonary embolism. Usually the authors conclude by saying that if patients get better on antibiotics, one can be sure that the condition was septic shock. It's a very difficult differential diagnosis, and since it comes up quite frequently, I think all one can do for a seriously ill patient is to treat for shock and see what happens.

With regard to Dr. Bunge's comments on bacteremia, I want to point out that these are very real problems. With operations in this very septic area, bacteremia occurs frequently. However in practically all the studies made, bacteremia hasn't been shown to last longer than two hours. The patients do get shaking chills and they do get fever which lasts longer than two hours, but one can't isolate the organisms for longer than that. I'm not sure when this blood culture was taken, but it seems from the protocol that perhaps it was taken some hours later, rather than immediately. I assume that clinically this would suggest to me that the patient had a septicemia rather than a bacteremia.

Now with regard to the antibiotics for this organism. The illness is a serious one, and possibly there are very few recoveries without antibiotics. Statistics have been offered to show that if one

uses the wrong antibiotic, the fatality rate is 91 per cent; but if one uses the right antibiotic and the patient is already in shock, the fatality rate is about 30 per cent.[1] If the patient is not in shock, the fatality rate is somewhere around 20-30 per cent, so even without shock the disease is still serious.

I think it probably is not safe to treat with one antibiotic agent alone. The Mayo Clinic group have published a good review of gram-negative-rod septicemias in general, and they have settled for either Chloromycetin and streptomycin, or tetracycline and streptomycin.[2] If one does *in-vitro* studies of this organism and finds out which antibiotics work best, the order is as follows: Colistin is best, and of course colistin is polymyxin E, so one can throw in a polymyxin here, too, because it is very close to colistin. But colistin is easier to use. Chloromycetin comes next, streptomycin next, and tetracycline next. Furadantin is a good antibiotic to use in the urinary tract, but not elsewhere, the two reasons being that although it is given intravenously, it is very quickly excreted in the urinary tract, and since it is quite strongly bound to protein there is some doubt as to how active it is in the blood stream. Thus I would think that probably the blind choice would be Chloromycetin-streptomycin, or colistin-streptomycin, or tetracycline-streptomycin. The deciding factor would be that Chloromycetin can penetrate into areas of pus better than colistin or tetracycline.

I believe that when this patient was in need of this chemotherapy, he had a BUN of 100 mg. per cent, so I think I would have given Chloromycetin without many qualms. It is all metabolized in the body. I would be hesitant about streptomycin, and would probably give a single dose of 2 Gm. of streptomycin, give no more of it for three days, and then give another single-gram dose. Or one could titrate the patient's serum and find out whether it is bactericidal for his own organisms. When this is no longer true, another dose of the drug should be given.

The tetracycline is a little harder to assess, but I feel that for the first couple of days or so one can get away with a gram a day.

So basically, one should use two drugs. One of them should be bactericidal, and that one ought to be either streptomycin or colistin. The disease is unlikely to be cured in less than four weeks of treatment. This is classically the way that E. coli septicemia occurs after operations on the GU tract. Of course the organism belongs there, to some extent, and is to be expected, but I think that although transient bacteremia is expected in all these operations, or in most of them, a continued presence of organisms in the blood (septicemia) is pathologic and needs treatment.

Dr. Longnecker: Are there other questions regarding the infection or the organism?

Dr. DeGowin: Could the urologists give us some perspective on how often this happens after transurethral resection?

Dr. Bunge: Well, our mortality rate is 1-2 per cent. The total of the 1-2 per cent who may have died of septicemia, I don't know, but we often say that if you bring to our ward 100 men of the age group that we deal with, within two weeks one or two of them are going to die.

Dr. Ziffren: What happened before the days of antibiotics?

Dr. Bunge: That was the sulfa era.

Dr. Ziffren: And what happened before that?

Dr. Bunge: The mortality rate in the beginning was something like 50 per cent; then as technics improved, it dropped to 15 per cent; it then gradually leveled off at about 4 or 5 per cent. I don't know what would have happened if we had not found the antibiotics.

Dr. Culp: In the days prior to antibiotics there were very few people who were willing to undertake a prostatectomy as a one-stage procedure. It was common practice in those days to do a prostatectomy by the suprapubic approach. Usually a suprapubic cystostomy was done first, to prevent spillage of urine into the space of Retzius. By allowing this area to seal itself off, when one did the prostatectomy, he did not enter into the space of Retzuis but simply went down the tract of the suprapubic cystostomy and enucleated the prostate. Surgeons found they had to do it in that two-stage manner, or the mortality for prostatectomy was prohibitive.

Dr. Longnecker: Dr. Bunge has invited the internists to comment regarding the use of digitalis in this patient. Would someone care to take the bait?

Dr. Ziffren: The note on the chart says "Jones."

Dr. M. P. Jones, Internal Medicine: My note was this: "There were signs of tachycardia and pneumonia in the right lower lobe. Suggest penicillin therapy, chest x-ray tomorrow; may need digitalis later." I did not mean to suggest digitalizing the patient at that time. Then two days later, a note stated, "Febrile; electrolytes slightly better." (That was not my note, incidentally.) Then the chart says, "Will digitalize." But my original recommendation was that we just observe the patient. He had a chronic tachycardia and no sign of congested areas.

Dr. Smith: With a temperature of 104° F., we should expect a pulse rate of about 130. I don't know how fast it was, but that would be a legitimate correlation with the pulse rate. A good rule of thumb is to correlate a pulse of 80 with a temperature of 99 and add 10 points of pulse rate for every degree of rise in Fahrenheit temperature.

SUMMARY OF NECROPSY FINDINGS

1. Acute pyelonephritis, severe, left; chronic pyelonephritis, bilateral.
2. Hydronephrosis and hydroureter, bilateral.
3. Hyperplasia of the prostate; recent transurethral resection of the prostate.
4. Trabeculation of bladder.
5. Uremia.
6. Septicemia.
7. Arteriosclerosis, generalized; coronary artery

sclerosis, moderate, with stenosis of right coronary artery.

STUDENTS' DIAGNOSES

1. Pyelonephritis.
2. Septicemia.
3. Uremia.
4. Pulmonary embolus.

DR. BUNGE'S DIAGNOSES

1. Renal failure due to nephrosclerosis with hydronephrosis and pyelonephritis.
2. Pulmonary edema.

REFERENCES

1. Hall, W. H., and Gold, D.: Shock associated with bacteremia; review of 35 cases. A.M.A. Arch. Int. Med., **96**:403-412, (Sept.) 1955.
2. McHenry, M. C., Martin, W. J., and Wellman, W. E.: Bacteremia due to gram-negative bacilli; review of 113 cases encountered in five-year period 1955 through 1959. Ann. Intern. Med., **56**:207-219, (Feb.) 1962.

Postgraduate Course in Surgery: Trauma

The Department of Surgery at the U. of I. College of Medicine will present a postgraduate course on trauma in Iowa City on December 7 and 8, in cooperation with the Departments of Orthopedic Surgery, Urology, Anesthesiology and Preventive Medicine and Environmental Health. The registration fee of $15 includes the cost of the lunch, and the program has been approved for seven hours of credit by the American Academy of General Practice.

Tuesday, December 7
University Athletic Club

6:00 p.m. REGISTRATION, SOCIAL HOUR AND DINNER
8:00 p.m. The Responsibility of the Physician in the Education of Non-medical Persons in the Emergency Care of the Sick and Injured

Wednesday, December 8
Medical Amphitheater, University Hospitals

8:45 a.m. "Practical Matters in the Management of Tibial Fractures"—Michael Bonfiglio, M.D.
9:05 a.m. "Outline of Principles in the Care of Open Fractures"—Carroll B. Larson, M.D.
9:45 a.m. "Salvage of the Ruptured Kidney"—D. A. Culp, M.D.
10:05 a.m. "Assessment of a Year's Experience in the Use of Silver Nitrate in Infected Burns"—Sidney E. Ziffren, M.D.
10:45 a.m. "Treatment of the Unstable Chest Wall"—J. B. Flege, Jr., M.D.
11:05 a.m. "Newer Concepts of Pulmonary Ventilation in the Injured Patient"—William K. Hamilton, M.D.
11:30 a.m. "Reducing the Factor of Disfigurement in Closure of Superficial Wounds"—D. W. Furnas, M.D.
11:50 a.m. "When Is Operation Indicated in Acute Head Injury?"—G. E. Perret, M.D.
12:30 p.m. LUNCH
1:30 p.m. "The Sprains of Knee and Ankle"—A. E. Flatt, M.D.
1:50 p.m. "Preventive Engineering: A Progress Report"—Lafayette W. Knapp, Jr., M.S.
2:10 p.m. REPETITIVE GROUP DEMONSTRATIONS
Image Amplifier in Management of Acute Skeletal Injuries
Motion Pictures:
"Mowing Lesson for Charlie"
"Safety Glass Lesson for Charlie"
Application of Plaster
Wound-Closing Technics
4:00 p.m. ADJOURNMENT

Cardiac and Respiratory Disease Conference

The Department of Internal Medicine at the U. of I. College of Medicine will present two half-day programs, in the Medical Amphitheater in Iowa City, on December 3. The morning session, on Epidemiology and Control of Certain Respiratory Problems, will be cosponsored by the Iowa Thoracic Society and the Iowa Tuberculosis and Health Association. The afternoon session, on Diseases of the Heart, Kidneys and Great Vessels, will be cosponsored by the Iowa Heart Association and the Iowa State Department of Health. The AAGP has approved each for three hours of credit. There will be no registration fee.

Respiratory Problems

9:00 a.m. "BCG—Old Weapon, New Approach"—Wm. R. Barclay, M.D., associate professor of medicine, University of Chicago
9:45 a.m. "Conjugal Tuberculosis"—Thomas J. McIntosh, M.D., resident, Department of Internal Medicine. Discussant: Isaac Horowitz, M.D.
10:40 a.m. MOVIE: "Point of View" (A tool for teenage education against smoking)
11:00 a.m. "Asthma and Hay Fever: Epidemiology as Seen in Iowa"—Jeanne Montgomery Smith, M.D.
11:30 a.m. "Emphysema: Technics for the Practitioner in Treatment"—R. Drew Miller, M.D., Mayo Clinic, Rochester, Minnesota
12:30 p.m. LUNCHEON

Diseases of the Heart, Kidneys and Great Vessels

1:30 p.m. "The Modern Treatment of Chronic Renal Insufficiency"—George B. Theil, M.D.
1:55 p.m. "Percutaneous Treatment of Atherosclerotic Obstruction in the Legs"—Charles T. Dotter, M.D., chairman, Department of Radiology, University of Oregon
2:40 p.m. "Methods for Reducing the Serum Lipids to Prevent Atherosclerosis"—William E. Conner, M.D.
3:20 p.m. "Intercranial Hemorrhage and Infarction"—Maurice W. VanAllen, M.D.
3:50 p.m. "Diagnosis of Occlusive Cerebral Vascular Disease by Angiography"—Henry W. Pribram
4:20 p.m. "The Effects of Anemia Upon the Heart and Circulation"—John W. Eckstein, M.D., and Henry E. Hamilton, M.D.

Editorials

MERRY CHRISTMAS!

Despite the passage of Medicare by the Congress, despite "police action" all over this troubled world, despite the burning of draft cards, and despite serious social, economic and health problems on all continents, we do wish you and yours a very Merry Christmas.

This is a fitting time for all thinking people to pray to the Prince of Peace for the cessation of wars, the resolution of conflicting ideologies, the end of bigotry.

This is a season when values should be crystal clear. Life is precious and it is uncertain, so make this a happy and meaningful Christmas for those you love.

THANKS TO DOCTORS AND NURSES

In recent years we have heard a great deal of criticism of hospitals, of nursing care and of the medical profession. The press contains nationally syndicated articles that appear designed to soil the image of the physician in the minds of the public. One of the most recent articles implied that physicians make excessive profit through the dispensing of drugs, through the sale of sample drugs, and through the ownership of the pharmacies to which their patients are referred. Certainly few physicians exploit their patients, and it is unfair to imply that all or most of them do. It would be just as reasonable to imply that because one physician is found guilty of performing a criminal abortion that no one in the entire medical profession is above such criminal practices.

During the summer, I underwent a five-week period of hospitalization which was an illuminating and rewarding experience. It refuted most of the completely unfair and unrealistic criticisms which one hears bandied about. Though I was a complete stranger in the hospital, the experience reaffirmed my faith in mankind, and in the dedication and skill of those engaged in the healing arts. Instead of being indifferent and inattentive, the physicians and nurses were uniformly attentive and kind. Especially noteworthy was the complete lack of gossip by nurses and aides about the ailments and the conditions of other patients on the floor.

Admittedly, a hospital is no pleasure resort, but a modern hospital is a good refuge in time of trouble, and the public can have great confidence in those who serve therein.

REAPPRAISAL OF ESTROGEN THERAPY FOR BREAST ENGORGEMENT

A common therapeutic measure included in routine postpartem orders for women who have chosen not to breast-feed their infants is the administration of estrogen to inhibit lactation and to prevent the discomfort of breast engorgement. The use of estrogen for this purpose has recently been subjected to critical appraisal by MacDonald and O'Driscoll, of the National Maternity Hospital, Dublin.*

The study by the Irish physicians was conducted on 500 consecutive mothers who for various reasons had decided not to nurse their babies. Alternate women were given 5 mg. of stilbestrol or a a placebo, morning and evening. The identities of the tablets were coded, and were unknown to the patients and to the medical and nursing staff until an analysis of the results was made. The patients and the hospital personnel were told that the tablets were being given to prevent breast discomfort.

Every morning the physician interrogated each patient concerning breast discomfort. The answers were recorded in the clinical notes, and the results were assessed. No attempt was made to grade the degree of discomfort, and examinations of the breasts were not done. The average period of hospitalization after delivery was 4.76 days for both the treated and the placebo groups.

A statistical summary on the 500 patients' responses revealed that 95 per cent of the mothers who were given 10 mg. of stilbestrol daily had no complaint of breast discomfort, but of the 250 women who were given the placebo, 90 per cent reported none. In both groups, the complaint of discomfort usually occurred on the second or third postpartem day.

According to the authors, this trial confirmed that mothers given 10 mg. of stilbestrol daily rarely complain of breast discomfort, but it also showed that a placebo is almost as effective. As a result of this experience, more than 7,000 women delivered at the National Maternal Hospital in the last 18 months have not received estrogen therapy for the suppression of lactation. Any discomfort was treated by the administration of mild analgesics. It was concluded that the routine use of estrogens to suppress lactation is unjustified.

The study points out the need for careful appraisal of routine orders. It is not unusual for certain procedures and the giving of certain drugs to be dictated by custom, rather than by merit or need.

---

* MacDonald, D., and O'Driscoll, K.: Suppression of lactation. LANCET, 2:623, (Sept. 25) 1965.

Editorials continued...

HYPOTHYROIDISM IN DIABETICS

Now that many drugs are available, it is important for the clinician to be alert for the adverse metabolic effects as well as for the benefits to be derived from their administration. A classical example is the induction of diabetes through the long-continued use of thiazide diuretics in hypertensive patients. It is reported that an elevated fasting blood sugar or a diabetic glucose tolerance curve has been found in approximately 30 per cent of hypertensive patients who had been receiving thiazide drugs over a period of three years.

A recent article reports another adverse metabolic effect which clinicians should be quick to recognize. Physicians from the Sheffield Royal Infirmary found a high incidence of hypothyroidism among patients attending their diabetic clinic, and it was their impression that hypothyroidism developed more often in diabetics receiving sulphonylurea—either tolbutamide or chlorpropamide—than in those patients receiving other forms of treatment. This observation prompted a detailed study of a large group of diabetics for the detection of hypothyroidism, with particular reference to the type of treatment which the patients had been given.*

The Sheffield Study consisted of a comparison between 220 diabetics treated with tolbutamide or chlorpropamide for at least six months, and a control series of 229 diabetics treated in a different manner. In the control group, 113 patients had been treated by diet alone; 93 were receiving insulin; and 23 were being treated with biguanide drugs. The two groups were carefully matched for age, sex, and duration of the diabetes.

Because estimations of protein-bound iodine (PBI) in the serums of a large series of patients seemed impractical, the group of treated and control patients were first screened. Clinical examinations were performed by at least two of the physicians involved in the study. If either man's examination suggested hypothyroidism, the patient was graded "possible hypothyroid." Additional screening criteria consisted of the duration of the ankle-reflex and changes in the electrocardiogram which were suggestive of hypothyroidism. If any one of the screenings aroused a suspicion of hypothyroidism, the serum PBI was estimated in duplicate. A value of less than 4 μg. (micrograms) per 100 ml. was considered a confirmation of hypothyroidism.

In the group of 220 diabetics who were being treated with sulphonylurea, there were 87 patients in whom screening suggested hypothyroidism. By contrast, in the group of 229 controls, there were 51 patients in whom hypothyroidism was considered. In the group of 87 patients receiving sulphonylurea and in whom hypothyroidism was suggested clinically, 30 had serum PBI levels of less than 4 μg. In the control group of 51 patients in whom hypothyroidism was suspected, only eight had serum PBI levels under 4 μg. This difference was considered highly significant. It was found that the incidence of hypothyroidism increased with the duration of therapy; however no relationship could be found between the dose and the development of hypothyroidism. Enlarged thyroid glands were found in 31 of the patients receiving sulphonylurea, and in 37 of those receiving other forms of treatment. Yet among the patients found to be hypothyroid, 30 in the sulphonylurea group and eight receiving other forms of therapy had enlarged thyroid glands. After withdrawal of sulphonylurea, the PBI returned to normal levels in the majority of patients.

From their experience with this large group of diabetics, the authors concluded that the antithyroid effect of sulphonylurea is dependent upon the duration of therapy rather than upon the dose, and that 20 per cent of the patients can be expected to develop hypothyroidism within five years. With continued therapy, the proportion will increase. When interrogated, the majority of hypothyroid patients in the sulphonylurea group admitted that they had experienced symptoms of lethargy and coldness. Symptomatic improvement was noted in those patients in whom the drug was discontinued.

In a discussion of screening methods for the detection of hypothyroidism, the authors said that clinical evaluation by experienced observers is the method of choice, but that the speed of ankle-reflex is significant. Though the reflex can be absent in diabetic neuropathy, they regard the test as a reliable indication of hypothyroidism. The electrocardiogram has limited value because of the high incidence of ischemic changes. Such phenomena were present in 60 per cent of both the treated and the control groups.

Since hypothyroidism is very insidious in its onset, and since the patient has no specific complaints, they say that the condition can easily be overlooked, even though the physician sees the patient frequently. The authors also express the opinion that hypothyroidism resulting from the administration of sulphonylurea may account for a failure to lose weight and for general ill health, and that it may increase the patient's susceptibility to ischemic heart disease. This is particularly true among female diabetics with maturity-onset, in whom thyroid reserves may already have been subnormal.

Diabetics treated with sulphonylurea should be watched carefully so that alternative treatment can be given if hypothyroidism is suspected.

---

* Hunton, R. B., Wells, M. V., and Skipper, E. W.: Hypothyroidism in diabetics treated with sulphonylurea. LANCET, 2:449-451, (Sept. 4) 1965.

CHLORAMPHENICOL MUST BE USED WITH CARE

Physicians who prescribe chloramphenicol in the treatment of infections would do well to familiarize themselves with a report on the hematologic toxicity of the drug among a group of patients at Wadsworth Hospital, Veterans Administration Center, Los Angeles.* It is significant that bone-marrow depression occurred regularly with plasma-chloramphenicol levels of 25 mg. per ml. or more, for that finding indicates that a toxic effect is a pharmacologic property of the drug. From the study it was deduced that one should avoid even a mild toxicity by limiting the dosage and the duration of treatment.

The patients in the study consisted of 41 males whose average age was 64 years. Twenty-five of the group were given chloramphenicol for staphylococcal infections, and 16 were given the drug for the treatment of infections due to gram-negative organisms. The controls were a group of 12 male patients whose average age was 58 years and who had a variety of acute infections that were being treated with other antibiotics.

By random lot, the patients selected for therapy with chloramphenicol were assigned a coded supply of capsules containing either 250 or 750 mg. of chloramphenicol base. Two capsules were given orally every six hours, for a total daily dose of either 2 or 6 Gm. Plasma levels were measured at two and six hours after the first dose of the drug. In order to assess liver and kidney function, the bromsulfalein retention and serum creatinine were determined 45 minutes after the initiation of therapy.

Both the treated and the control patients were subjected to a battery of tests, the laboratory having no knowledge of the therapeutic program being carried out. Baseline determinations were done within the first five days of treatment. Reticulocyte counts were repeated three times weekly, and the other values were determined at weekly intervals. The battery of tests consisted of hemoglobin, hematocrit, reticulocyte and platelet counts, bone-marrow examination, and several tests concerned with serum iron.

Among the 12 control patients moderate deviations from normal values were found, but nothing suggested any significant depression of the bone-marrow. In the group of 20 patients given 2 Gm. of chloramphenicol daily, the hematologic findings were very little different from those of the control group. In two patients, however, changes characteristic of bone-marrow depression developed during the second week of therapy. In marked contrast to the control group and to those receiving 2 Gm. of chloramphenicol daily, 18 of the 21 patients receiving 6 Gm. of the drug daily showed changes characteristic of erythropoietic depression, and in four of them there was also a mild reduction in the number of platelets. Leukopenia developed in only three of the 21 patients, but other tests showed a significant difference between the heavily-medicated patients and those in the other two groups. Vacuoles were found in the erythroblasts of 15 of the 18 cases in which serial examinations were done. Vacuolation of bone-marrow cells was found as early as three days after the onset of therapy. Vacuolation of cells of the granulocytic series was seen in seven cases. In those receiving 6 Gm. of the drug, the reticulocyte counts were depressed during each of the five-day periods of drug administration. After the second week of therapy there was a significant decrease of the mean hematocrit and platelet count. The average leukocyte count remained unchanged during therapy.

The 6 Gm. dose resulted in persistently high plasma concentrations of the drug six hours after the onset of treatment, and at these high levels there was little conjugation of the drug. In general, there was poor correlation between the dosages and the plasma levels. Levels of 25 μg. (microgram) or more per ml. were usually associated with evidence of bone-marrow depression, and suggested that this effect is a dose-related pharmacologic property of chloramphenicol. Total daily doses of 50 mg. per Kg. of body weight regularly resulted in toxic plasma concentrations. Erythropoietic depression was usually the first manifestation of toxic depression, and the decrease in platelets and morphologic changes in the leukocytes usually did not develop until the higher doses had been continued for two weeks or more, thus suggesting that the severity and extent of bone-marrow depression is related to the duration of therapy as well as to the dosage. The authors acknowledge that perhaps the high incidence of hematologic toxicity in their group of patients can be attributed to the patients' poor nutritional state resulting from age and chronic illness.

It is pointed out that the dose-related depression of the bone-marrow disappears promptly when the drug is discontinued. This fact raises some doubt whether toxicity is related to chloramphenicol-induced aplastic anemia. The evidence suggests that individual hypersensitivity must be the basis for this serious complication, yet some reports indicate that the development of aplastic anemia can be related to high dosage or prolonged administration of the drug.

The authors emphasize that in the individual case there should be a good clinical indication for the use of chloramphenicol in preference to other antibiotics. They urge that if it is given, the dose and the duration of therapy should be limited in order to avoid even mild toxicity, and to reduce

* Scott, J. L., Finegold, S. M., Belkin, G. A., and Lawrence, J. S.: Controlled double-blind study of hematologic toxicity of chloramphenicol. NEW ENGLAND MED. J., 227:1137-1142, (June 3) 1965.

Editorials continued...

the hazard of aplastic anemia. From their experience they concluded that plasma levels in excess of 15 μg. per milliliter are of no significant advantage in most chloramphenicol-responsive infections. Such levels can usually be attained with doses of 25 to 30 mg. per Kg. of body weight per day, which rarely produce bone-marrow depression if given for limited periods. Thus there is little reason for giving larger doses. Whenever higher doses or prolonged administration appears necessary, regular assessments of bone-marrow function should be carried out by means of frequent reticulocyte counts, or by weekly determinations of the serum-iron levels and iron-binding globulin saturation.

The clinician must recognize that bone-marrow depression is a pharmacologic property of chloramphenicol, and that the toxicity is related to dosage and to the duration of therapy. If circumstances demand the administration of this drug, the experience of the Los Angeles group of physicians offers guidelines for its proper use.

ONCE UPON A TIME

If you are a daring soul who enjoys the adventure and excitement of spending an idle evening thumbing through a copy of NATIONAL GEOGRAPHIC MAGAZINE, or if you are a philosophic type who likes to come to grips with destiny by spending an idle evening contemplating the changing, yet never-changing, pattern of human perspective and behavior, then permit us to recommend that you devote an evening to an old issue of a medical journal. Select any one you wish, but if you should start with the January 7, 1911, issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, you would come across the following items of interest, presented here in or out of context, and with a minimum of comment:

Dr. Reuben Peterson, professor of obstetrics and gynecology at the University of Michigan, in a paper discussing the indications and technique for vaginal Cesarean section, refers to "this age of specialization."

Dr. Robert A. Hatcher and Dr. Harold C. Bailey, of the Laboratory of Pharmacology of Cornell University Medical College, have written at length about the evaluation of Cactus grandiflorus as a cardiac medication. Included in the paper is the sad tale of Gordon Sharp, who after several years of clinical observation, "came to the conclusion that Cactus grandiflorus possessed no therapeutic properties whatsoever." He had obtained the Cactus grandiflorus for his work from several well-known drug houses in Great Britain, but when, at the conclusion of his work, he submitted a specimen of his drug-house cactus to a botanist, the latter found that it was not Cactus grandiflorus, but Optuntia decumana. Undaunted, Gordon Sharp thereupon conducted a new series of experiments with the real Cactus grandiflorus, and came to the same conclusion that he had with the spurious cactus: it was inert—no good.

The same article also includes the following somewhat pertinent observation: "It is well known, but often forgotten by enthusiasts, that patients usually tend to recover regardless of the disease or the drugs used in its treatment."

A report from a meeting of the Southern Surgical and Gynecological Association contains this gem: "Certain cases of chronic urethritis and chronic ureteritis heretofore of obscure origin are due to tonsillitis, although the great majority of these cases are due to gonorrhea."

A small news items has come from Indiana: "In Indianapolis, tests made in the food and drug laboratory of the State Board of Health, of several prepared breakfast foods of different brands, showed that packages marked 1 pound net contained only 10 ounces."

There is the exposure of a fraudulent "Expert Inspector of Urine" who, after examining a glucose in water solution that had been forwarded in the appropriate urine container, made the following diagnosis: "Careful examination of the urine shows there is poor circulation of the blood, which will cause a general weakness, the liver is not working properly, which will cause gas in the stomach and bowels, and you will have a weak, tired nervous feeling, also headache and backache spells." In present-day terminology, this would be called a urine profile.

A letter from the regular Paris correspondent mentions the dilemma and controversy resulting from the candidacy of Mme. Curie for a place in the Académie des sciences. The issue: should a female be admitted?

An abstract of an article from the AMERICAN JOURNAL OF SURGERY points out that epilepsy may be caused, in part, by an acute flexure at the rectosigmoid juncture, with consequent constipation and intestinal toxemia.

An article by Alexis Carrel and Montrose T. Burrows concerns the cultivation of tissue in vitro.

A "Special Article" is entitled "Typhoid Fever in Des Moines, Iowa" and contains a detailed report about a recent typhoid epidemic there. Included are many facts about the city, its location, its history, its topography, its various attractions, etc. Mention is made of the fact that it has exceptional railroad facilities: "Nineteen different railroads enter the city." The author continues: "As one of the greatest educational centers of the middle west, it has thirteen colleges and technical schools with a total attendance of about six thousand." A thorough investigation of the typhoid epidemic inescapably placed the blame on the "public water supply as the main if not the sole cause of the Des Moines epidemic." An Iowan cannot fail to feel a certain amount of pride in

having had his capital city the center of so much attention.

A news item from Maryland: "The authorities of the University of Maryland have limited the salary of medical professors to $1,500 per annum."

An article describes a new method for blood transfusion: a metal tube tied into donor and recipient veins, with a connection for pumping with a syringe. Reference is made to the previous practice of anastomosing a donor's artery to the recipient's vein—the method of Crile—and its disadvantages.

An editorial on "Deaths of Physicians in 1910." There were 2,324 physician deaths during 1910 in the United States and Canada, out of a total estimated physician population of 137,000. Of the decedents, 30 were between the ages of 91 and 97; 214 between 81 and 90; 465 between 71 and 80; 497 between 61 and 70.

There is a lengthly discussion of fee-splitting, its causes and remedies, by a committee of the Erie County (N. Y.) Medical Society. Here are a few of the many ideas expressed: The chief cause of fee-splitting "seems to be the unfortunate and unnecessary overcrowding of the medical profession. . . ." "The cost of living has decidedly increased, and the mode of life has undergone a transformation too little appreciated. The fee and the income have not changed in proportion, if at all. Extravagance is the fashion, and the necessities of a progressive physician accumulate each year." In commenting on the "superabundance of medical colleges," the report says, "It also seems to be true that about one-third of the medical colleges in this country could be lifted to a higher modern standard and supply all the doctors needed for an indefinite time and growth of population."

A letter from the regular Berlin correspondent mentions a recent conflict involving physicians, insurance societies and government: "This affair will doubtless tend to make the legislators, who are still busy with the new imperial insurance law, more careful to avoid conflict with the entire medical profession. The management of the Leipsic League has issued an announcement to the effect that physicians will combine for mutual aid if the projected unfavorable provisions of the new imperial insurance bill are enacted into law." A present-day reader can't help wondering whether those old-time German doctors made out any better than we.

The idle evening will come to an end, but a somewhat reassuring thought will persist: Why should anyone think that our problems are unique or new, that the world is going to hell—now, for the first time? It has been going in that direction for years. As a matter of fact, it will no doubt still be going there when our great-great-grandchildren, and their great-great-grandchildren, first discover, to their consternation, where the world is really headed.

—*Daniel F. Crowley, M.D.*

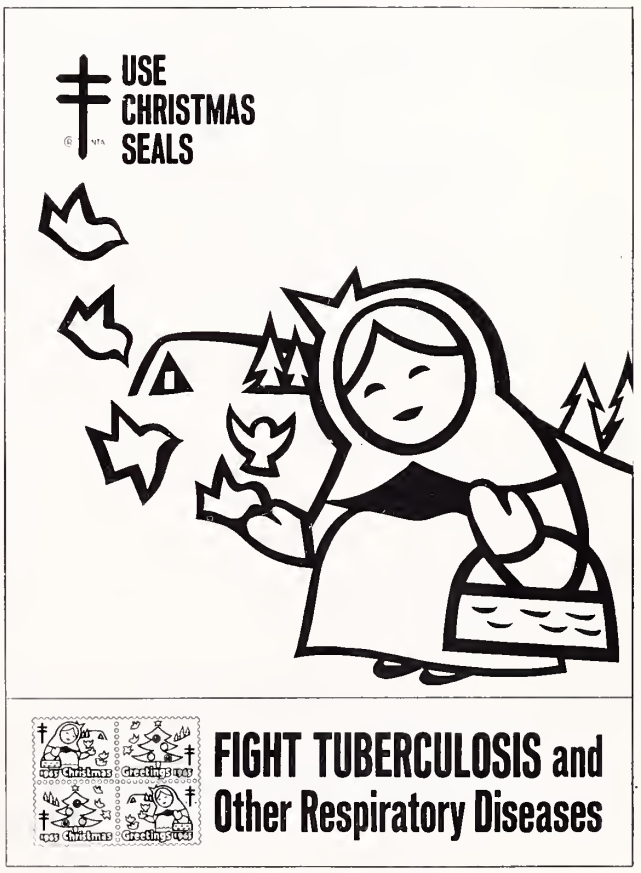
U of I Nutrition Study Continues

The nutrition study of Iowa's teenagers, which which was started in the school year 1963-64, is to be continued. This year, Dr. Robert E. Hodges and Dr. Willard A. Krehl, of the Department of Internal Medicine, University of Iowa, will observe more than 3,000 students in grades nine through 12 in 30 communities. Assistance is being provided to the project directors by Professor Norman V. Strand of the Statistical Laboratory, Iowa State University.

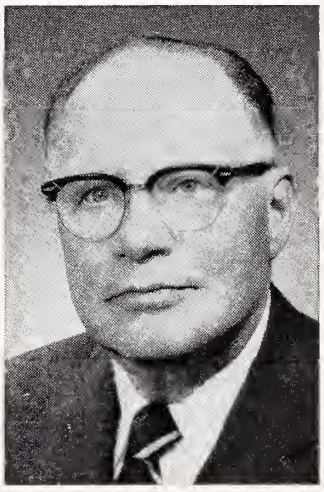
For the first time, the study is being expanded to include children in the pre-teen age group. Nearly 3,000 children in grades five through eight will be observed with special reference to their state of nutrition. It is believed that these youngsters who are in a period of very rapid growth and physiologic stress, offer a unique opportunity for establishing a base for future studies of the influence of diet on chronic degenerative diseases.

As in the past, a general physical examination will be performed on each student examined. In addition, from some of them, blood and urine samples will be taken for analysis, and dietary histories will be obtained. These data, when combined, should provide a very good reference point for the future, as well as provide valuable information on today's youth.

The aims and goals of this study received the approval of the State Department of Health and of the Iowa Medical Society.



President's Page



Thanksgiving Day will have passed before this message is published, but I should like, however belatedly, to remind you that we all have plenty to be thankful for, personally. Likewise, even in these trying times, the Iowa Medical Society has much to be grateful for. We are more than fortunate to have an excellent executive staff to guide us and to keep us abreast of the changing times. These dedicated people know no hours, and have far more concern for the future of medicine than have many of the doctors in Iowa. Our executive vice-president is recognized as one of the top medical executives, and he has stimulated his staff to the same heights.

In addition, there are two physicians who strive, year after year, to improve the image of organized medicine and who give much of their time to the details of our Society. Dr. Richard Birge, our secretary, and Dr. Verne Schlaser, our treasurer, work diligently at the home base throughout the year, and at all national meetings, with but little recognition.

So let's all be thankful for these dedicated people who work behind the scenes.

Frank Oberg

President

THE JOURNAL *Book Shelf*

BOOK REVIEWS

PEDIATRIC ELECTROCARDIOGRAPHY, by *Warren G. Guntheroth,* M.D. (Philadelphia, W. B. Saunders Company, 1965. $7.00).

This is a hardbound handbook of 150 pages which presents a concise approach to the normal and abnormal patterns of pediatric electrocardiography. The author emphasizes three dimensions of the heart, rather than 12. His terms of reference are anterior-posterior, superior-inferior and left-right. Primary emphasis is placed on interpretation of standard scalar tracings, but supplementary information on vectorcardiograms is presented. For quick, ready reference, loose-leaf duplicates of various tables and figures are provided.—*M. E. Alberts,* M.D.

DISEASES OF THE NEWBORN, SECOND EDITION, by *Alexander J. Schaffer,* M.D. (Philadelphia, W. B. Saunders Company, 1965. $22.00).

Five years and many advances in neonatology have transpired since the publication of the well accepted first edition of this thousand page text. A number of omissions have been corrected, and many of the discussions have been updated. A section on Fluid and Electrolyte Balance is presented by Dr. Lawrence Finberg. Dr. Milton Markowitz's section on Cardiovascular Disorders has been thoroughly revised. New material on gross chromosomal aberrations has been added.

This book is highly recommended to every physician concerned with the care of the newborn, and a copy should be in every hospital having a newborn nursery.

The only flaw I found was a typographical error—the letter "s" was omitted from my name in a citation, on page 508, to an article by Doctor Blizzard and me.—*M. E. Alberts,* M.D.

CURRENT SURGICAL MANAGEMENT, III, ed. by *Edwin H. Ellison,* M.D., *Stanley R. Friesen,* M.D., and *John H. Mulholland,* M.D. (Philadelphia, W. B. Saunders Co., 1965. $11.50)

Like the second volume which was published in 1960, this third volume reprints the preface to the original one, which appeared in 1957, setting forth the reason the three editors had for compiling their materials. Each of the three volumes presents varying viewpoints, side by side, on controversial surgical topics. In some instances the concepts are at variance because of fundamental differences, and in others because of less basic disagreements on such points as the choice of, or timing of, an operation.

A book such as this does not provide answers. Rather, it demonstrates how certain authorities arrived at their own answers, and thus it may guide the reader in making that difficult and unavoidable decision which is necessary in the case of each patient whom he treats.

Volume III again takes up problems which were discussed in Volume II. The contrasting approaches to the problems vary considerably because of the knowledge that has been acquired during the intervening years, but the controversy still goes on.

Volume III includes views on forms of treatment for such lesions as carcinoma of the esophagus (various surgical technics *vs.* x-ray); carcinoma of the breast (about which there are many different opinions); biliary surgery; hiatal hernia (transthoracic approach *vs.* abdominal approach); portal hypertension; problems of diseases of the colon such as familial polyposis and ulcerative colitis; and many other controversial subjects.

This book should be required reading for all surgical residents and for anyone else who is interested in current surgical management.—*Ralph A. Dorner,* M.D.

BOOKS RECEIVED

PRINCIPLES OF CHEST ROENTGENOLOGY—A PROGRAMED TEXT, by *Benjamin Felson,* M.D., *Aaron S. Weinstein,* M.D., and *Harold B. Spitz,* M.D., (Philadelphia, W. B. Saunders Company, 1965, $6.00).

MANAGEMENT OF THE PATIENT WITH CANCER, by *Thomas F. Nealon, Jr.,* M.D., (Philadelphia, W. B. Saunders Company, 1965, $27.50).

FUNCTIONS OF THE CORPUS CALLOSUM, Ciba Foundation Study Group No. 20, ed. by *E. G. Ettlinger,* M.A., Ph.D., (Boston, Little, Brown and Company, 1965, $3.75)

HASHISH: ITS CHEMISTRY AND PHARMACOLOGY, Ciba Foundation Study Group No. 21, ed. by *G. E. W. Wolstenholme,* O.B.E., F.R.C.P., F.I. Biol., and *Julie Knight,* B.A., (Boston, Little, Brown and Company, 1965, $2.95)

COLOUR VISION, Physiology and Experimental Psychology, Ciba Foundation Symposium, ed. by *A. V. S. deReuck,* M.Sc., D.I.C., A.R.C.S., and *Julie Knight,* B.A., (Boston, Little, Brown and Company, 1965, $12.50)

CURRENT CONCEPTS IN MEDICAL PRACTICE, ed. by *John E. Mullins,* M.D., (St. Louis, C. V. Mosby Company, 1965, $10.75)

Coming Meetings

IN STATE

Dec. 3 — **Postgraduate Course, Cardiac and Respiratory Disease Conference,** U. of I. College of Medicine, Medical Amphitheater, Room E-331, University Hospitals, Iowa City.

Dec. 7-8 — **Postgraduate Course in Surgery, Trauma,** U. of I. College of Medicine, Medical Amphitheater, Room E-331, University Hospitals, Iowa City.

CONTINENTAL U. S.

Dec. 1 — **Symposium on Arthritis and Orthopedic Disabilities,** Mount Sinai Hospital Medical Center, Chicago.

Dec. 1 — **Special Medical Problems of the Elderly Patient,** University of Wisconsin and State Medical Society, University Hospitals, Madison.

Dec. 1-4 — **American Academy for Cerebral Palsy,** Sheraton-Cleveland Hotel, Cleveland.

Dec. 2 — **American College of Physicians Texas Regional Meeting,** Houston.

Dec. 3-4 — **Symposium on Macromolecular Metabolism, New York Heart Association,** Hotel Biltmore, New York.

Dec. 3-4 — **American College of Physicians, New Mexico Regional Meeting,** Santa Fe, New Mexico.

Dec. 3-5 — **American Psychoanalytic Association,** Commodore Hotel, New York.

Dec. 4 — **Regional Meeting for Internal Medicine Specialists in Arizona,** American College of Physicians, Pioneer International Hotel, Tucson.

Dec. 4 — **22nd Annual Tumor Seminar, San Antonio Society of Pathologists,** Brooke General Hospital, Fort Sam Houston.

Dec. 4-9 — **American Academy of Dermatology,** Palmer House, Chicago.

Dec. 5 — **Postgraduate Course in Management of Depression,** University of Colorado School of Medicine, Denver.

Dec. 5-7 — **American Society of Hematology,** Sheraton Hotel, Philadelphia.

Dec. 6-7 — **Symposium on Menstrual Mechanisms,** University of Colorado School of Medicine, Denver.

Dec. 6-10 — **Postgraduate Course on Psychiatry for the Internist, American College of Physicians,** Los Angeles County General Hospital, Room 2A15, Los Angeles.

Dec. 7-9 — **Southern Surgical Association,** Hot Springs, Va.

Dec. 7-10 — **Postgraduate Course in Cardiology—1965, American College of Cardiology,** Scripps Clinic and Research Foundation, La Jolla, Calif.

Dec. 8-9 — **Seminar on Maintenance and Restoration in the Aging Patient and Opportunities and Limitations in the Treatment of Alcoholism,** Hammack Auditorium, Menorah Medical Center, Kansas City, Missouri.

Dec. 8-10 — **Hahnemann Symposium—New Concepts in Gynecological Oncology,** Sheraton Hotel, Philadelphia.

Dec. 8-10 — **Second National Symposium on Coccidioidomycosis, Arizona Tuberculosis and Health Assn., Inc.,** Del E. Webb Towne House, Phoenix.

Dec. 8-10 — **Kansas City Society of Ophthalmology and Otolaryngology,** Hilton Inn, Kansas City, Missouri.

Dec. 9 — **American College of Physicians, North Carolina Regional Meeting,** Chapel Hill, North Carolina.

Dec. 9 — **Second Industry Conference on Nonproprietary Nomenclature for Drugs,** New York City.

Dec. 10-12 — **Initial Emergency Care and Transportation of the Sick and Injured, American Academy of Orthopaedic Surgeons,** Municipal Bayfront Auditorium, Miami.

Dec. 11 — **Semi-annual Seminar, Hepatic Pathology,** Illinois Registry of Anatomic Pathology, Hektoen Institute for Medical Research, Chicago.

Dec. 12-14 — **International Conference on the Lymphatic System, Committee on Shock of the National Academy of Sciences—National Research Council—and Tulane University School of Medicine,** New Orleans.

Dec. 15 — **Symposium on Degenerative Neurological Diseases,** Mount Sinai Hospital Medical Center, Chicago.

Dec. 26-31 — **American Association for the Advancement of Science,** University of California, Berkeley.

Jan. 5-6 — **Seminar on Renal Diseases,** Hammack Auditorium, Menorah Medical Center, Kansas City, Missouri.

Jan. 10-14 — **Postgraduate Course on Medicine of Tomorrow: Recent Advances in Internal Medicine,** American College of Physicians, Engineering Building Auditorium, Univ. of Alabama Medical Center, Birmingham.

Jan. 13-15 — **Sectional Meeting, American College of Surgeons,** Americana Hotel, Bal Harbour, Florida.

Jan. 16-22 — **12th Annual General Practice Review,** University of Colorado School of Medicine, Denver.

Jan. 17-21 — **35th Annual Mid-Winter Convention in Ophthalmology and Otolaryngology,** Research Study Club of Los Angeles, Statler Hilton Hotel, Los Angeles.

Jan. 19-21 — **John J. Hartigan Memorial Seminar, American College of Cardiology,** Peter Bent Brigham Hospital, Boston.

Jan. 20 — **Surgery and Anesthesia in the Elderly Patient,** University of Wisconsin and State Medical Society, University Hospitals, Madison.

Jan. 20-22 — **Postgraduate Course in Unresolved Problems in Cardiology,** American College of Cardiology, Mount Sinai Hospital, Miami Beach.

Jan. 20-22 — **Southwest Allergy Forum,** Plaza Motor Hotel, El Paso, Texas.

Jan. 21-22 — **Orthopaedic Research Society,** Palmer House, Chicago.

Jan. 21-22 — **American Society for Surgery of the Hand,** Palmer House, Chicago.

Jan. 22-23 — **Clinical Meeting, Florida Dermatological Society,** Belleview-Biltmore Hotel, Belleview.

Jan. 24-26 — **30th Annual Session of the International Medical Assembly of Southwest Texas,** Granada Hotel, San Antonio.

Jan. 24-28 — **What's New in the Diagnosis and Treatment of Cardiovascular and Pulmonary Diseases, American College of Chest Physicians,** Fontainebleau Hotel, Miami Beach.

Jan. 26-27 — **American Group Psychotherapy Association, Inc.,** Bellevue-Stratford Hotel, Philadelphia.

Jan. 28-29 — **9th Annual Cardiac Symposium,** Arizona Heart Association, Del Webb TowneHouse, Phoenix.

Jan. 28-30 — **Southern Radiological Conference,** Grand Hotel, Point Clear, Alabama.

Jan. 29-30 — **8th Annual Cardiovascular Seminar of the Hillsborough County and Suncoast Heart Association,** Curtis Hixon Convention Center, Tampa.

Jan. 31-Feb. 2 — **Second ACS Sectional Meeting,** American College of Surgeons, Shamrock Hilton Hotel, Houston.

ABROAD

Dec. 5-11 — **11th International Congress on Rheumatic Diseases and Interim Meeting of the American Rheumatism Association,** Gran Hotel Provincial, Mar del Plata, Argentina.

Jan. 10-13 — **Seventh International Symposium on Radioactive Isotopes in Clinical Medicine and Research,** Bad Gastein, Austria.

Jan. 20-22 — **World Congress on Diabetes in the Tropics,** Bombay, India.

THE DOCTOR'S BUSINESS

Things You Should Tell Your Insurance Company

HOWARD D. BAKER
Waterloo

Every person who pays out money for equipment realizes that it will need some future attention if it is to perform its function, but not every person realizes that this same attention is required for some much more valuable property—his life insurance. You can't just put your policies away in your safety deposit box and forget them. As the years pass, all sorts of events can take place to alter your original plans, and your insurance company cannot do a thing to help keep your policies current unless you take the initiative.

Here are eight situations that require special action. If any of them occurs to you, remember to notify your company.

(1) **If you change your address**—This is one of the main causes for lapsed policies and lost policyholders. Your notices of premiums due may not always be forwarded to you.

(2) **If you borrow on a policy**—If you borrow from a bank and use your insurance policy as security, you must make an assignment of your rights under the policy. First, you must notify the company when you make that assignment. Then when the loan has been repaid, you must make sure that a properly executed release is filed with the company.

(3) **If you are divorced or if you marry**—You will undoubtedly want to change your beneficiary in such a circumstance, for until you make a change, the company is bound by contract to pay the person whom you previously named. A great deal of financial hardship and ill will has been caused by failure to make these corrections.

(4) **If a beneficiary dies or a child is born**—It is again up to you to make the desired revision, lest the insurance proceeds be paid contrary to your wishes.

(5) **If you surrender a policy**—Get your agent to assist you in accomplishing the surrender to your best advantage. Rights upon surrender or lapse of a policy vary greatly, and you can act to your best advantage only if you have been fully informed of those rights.

(6) **If you want dividends paid differently**—Generally, you have a choice here, but unless you make your selection known to the company, it will continue handling the dividends in accordance with the original contract.

(7) **If your financial situation changes**—An increase in income, a new mortgage, an inheritance or other factors may throw your insurance program out of balance. Any of these will call for a new look at your policies, and you are the only one who will know of these changes.

(8) **A job or business change**—Such an occurrence may alter your Social Security status, or terminate group-insurance or pension plans on which you have relied, and thus call for changes in your life-insurance program.

Just as in the case of equipment, life insurance needs maintenance, and the real responsibility for this maintenance is yours.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was a agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Have You Informed Us of Your Change of Address?

Postal regulations on second class mail have become more stringent. Under a new ruling, we must pay ten cents per piece for undeliverable second class mail, but worst of all, if you don't happen to reside or practice at the *precise* mailing address which we have for you, your JOURNAL will not be delivered. We urge promptness on the part of all JOURNAL readers in notifying us of address changes!

STATE DEPARTMENT OF HEALTH

ARTHUR P. LONG, M.D., Dr.P.H., COMMISSIONER

Recommendations for Poliomyelitis Immunizations

The Division of Preventive Medical Services has received innumerable requests from physicians, both medical and osteopathic, for some recommendations concerning Sabin oral poliomyelitis vaccine. In accordance with recommendations made by the American Academy of Pediatrics, the United States Public Health Service and the American Public Health Association, the following may be considered official recommendations of the Iowa State Department of Health:

Vaccine of choice: Sabin oral poliomyelitis vaccine (trivalent). On the basis of all available data, both OPV and IPV have been effective in the prevention of paralytic poliomyelitis, and either vaccine is acceptable. However, an evaluation of the virtues and limitations of killed and live polio-vaccines reveals a clearcut superiority of the OPV as regards ease of administration, immunogenic effect, protective capacity and potential for the eradication of poliomyelitis. Therefore it is the vaccine of choice for community-wide vaccination programs of children and young adults and for routine immunization in infancy.[1]

ADDITIONAL BOOSTERS

1. A single dose of trivalent vaccine is recommended for children entering school, if they have previously been immunized with OPV. This dose is intended to eliminate any antibody gaps that may have resulted from the occasional failure to achieve a vaccine-take with one or another type during the primary course of immunization. If the child has never received oral vaccine, a full course of monovalent or trivalent vaccine should be given.[2]

2. Although the need for additional boosters has not been thoroughly established, it is the opinion of this Department that booster doses should be considered as an additional means of maintaining high levels of immunity. Therefore, additional booster doses of Sabin oral poliomyelitis vaccine (trivalent) are recommended at three- to five-year intervals.

REFERENCES

1. "Red Book, Report of the Committee on the Control of Infectious Diseases, 1964," American Academy of Pediatrics.
2. "Supplementary Committee Statement to the 1964 Red Book," American Academy of Pediatrics, Committee on Control of Infectious Diseases, October 25, 1964.

RECOMMENDED SCHEDULE

First Dose	Number of Doses	Boosters
Age 2 months	SABIN monovalent 3 oral doses 4 to 6 weeks apart	1 dose of trivalent at about 1 year or as recommended by physician.*
	or	
Age 2 months	SABIN trivalent Primary immunization of infants less than 1 year—3 oral doses 8 weeks apart	1 dose of trivalent at about 1 year or as recommended by physician.*
Preschool, School and Adults	2 oral doses 8 weeks apart	1 dose of trivalent at about 1 year or as recommended by physician.*
	or	
Age 2 months	SALK 3 injections 6 weeks apart, 4th after 6 months or longer	Every 2 years, as recommended by physician.

* Based on recommendations of American Public Health Association, "Control of Communicable Diseases in Man," 1965 Edition.

Iowa's New Serologic Testing for Syphilis

(TO BE INSTITUTED JANUARY 1, 1966)

In a number of instances, serologic assistance in the diagnosis of syphilis has confused the total picture because of the number of different tests performed. It has been customary to believe that the more tests used, the greater the chance of making an accurate diagnosis.

We have been flooded with an alphabet of laboratory tests—the VDRL, RPCF, TPCF, TPI, KRP and the FTA, to name a few. Each test has been developed for a specific program or plan, with the major goal of providing a more specific test for syphilis. The tests run the gamut, employing antigens that range from non-specific, to marginally specific, to specific, and using various physical and biologic means of indicating a positive result. Although these tests were conceived in attempts to clarify the existence of a disease state, in a number of instances they have done no more than confuse the issue.

In the past decade, perhaps the most specific aid in the diagnosis of syphilis has been the Treponema Pallidum Immobilization (TPI) test. The test utilizes living, viable treponomenes, and therefore is difficult and expensive to perform. For this reason, use of the TPI has been restricted to qualified diagnostic-problem cases.

Within the past five or six years, the fluorescent antibody technic has made great technical progress and has been used for the rapid diagnosis of a wide variety of infectious diseases. Naturally, its application to the diagnosis of syphilis was one of the first studied. We have seen various progressive modifications in this test. However, all tests carry the main signature, *i.e.*, FTA or Fluorescent Treponemal Antibody.

Basically the test utilizes Treponema pallidum which have been fixed on a glass microscope slide. The patient's serum is then applied and allowed to react, and then the excess is washed off. The indicator material, which is goat anti-human globulin conjugated to fluorescein isothiocyanate, is then applied. If the patient's serum contains antibodies to Treponema pallidum, a simple antigen-antibody reaction will occur in the first stage of the test. In the second stage, the residual human antibody reacts with the conjugate, and the resulting complex is viewed through a microscope equipped with selected filters and a brilliant light source. The test is relatively simple and inexpensive to perform. The most expensive items are the necessary laboratory instruments and a specially equipped microscope.

In field trials on a large number of sera from non-syphilitics and from patients in the various stages of syphilis, it now appears that the most recent FTA test—the FTA-ABS (in which non-specific treponemal reactions are removed by preliminary absorption)—is the most sensitive and specific when compared to the TPI as a standard for diagnosis. It also appears from these studies that the FTA-ABS is reactive considerably earlier than is the TPI.

In attempts, here in Iowa, to eliminate the confusion in the serodiagnosis of syphilis by means of the VDRL, Kolmer, RPCF and TPI tests, the State Hygienic Laboratory will institute a new serologic program on January 1, 1966. The Kolmer and RPCF will be eliminated, and in their place the FTA-ABS will be used. Since at this time there is no reason to question the sensitivity of the VDRL, it will therefore continue as the serologic screening test.

The new plan for serologic assistance in the diagnosis of syphilis will be as follows:

1. Perform the VDRL test on all serologic specimens submitted.
2. Quantitate each specimen that is VDRL-reactive or weakly reactive.
3. If the VDRL test is nonreactive but syphilis is clinically suspected, submit a second specimen seven to 10 days after the first specimen was taken.
4. If the second specimen is VDRL-nonreactive and syphilis is still suspected, consider the case a problem, and request the FTA-ABS on the third specimen.
5. If the VDRL and FTA-ABS are still nonreactive on the third specimen, you can conclude that syphilis is not present in the patient.
6. If for any reason further serologic studies are deemed necessary, request a TPI, but only after exhausting the above test sequence.

If you have blood-specimen mailing kits supplied by the State Hygienic Laboratory, you are asked to tell the laboratory how many mailing outfits you have on hand so that a supply of the new laboratory request forms can be sent to you. The new laboratory forms will be available for distribution on or about December 15, 1965.

Because the State Hygienic Laboratory processes a large number of syphilis-serology specimens each day, it will be necessary for each physician submitting specimens to complete the laboratory data form properly. The laboratory cannot maintain records on the number of specimens that have been submitted on a particular patient, and on any previous results. It is imperative, therefore, that the attending physician provide the information requested on each specimen in order to alert the laboratory as to which test(s) should be performed on the particular specimen submitted.

The State Hygienic Laboratory and the Iowa State Department of Health believe that if attending physicians will adhere to the scheme outlined above, there will be considerably less confusion in arriving at an adequate diagnosis in suspected cases of syphilis.

Problems of Teenage Mothers

Physicians need to play a parental role when they deal with teenagers who are going to have children, because young people need an authority to guide them, according to a University of Iowa psychiatrist. Speaking recently at a Nursing Institute on Prenatal and Perinatal Problems held at the University of Iowa, Dr. Albert S. Norris, an associate professor of psychiatry, said that physicians must consider not only the physical well being of teenage mothers but also their emotions. "Doctors should ask them how they feel—and how they feel about having a baby," he declared. "Many girls do not want their babies, and have a deep sense of guilt as a result."

Dr. Madelene M. Donnelly, director of the Division of Maternal and Child Health, in the State Department of Health, Des Moines, outlined the scope of the teenage-pregnancy problem during 1964. "Twelve per cent of the mothers who gave birth last year were teenagers," she said, "and of all illegitimate births, 42 per cent were to girls 19 years of age or younger. Some mothers were as young as 12."

She said that during 1964 there were 2,034 illegitimate births in the state, amounting to 3.6 per cent of the total births. "Some of those women came from border cities outside the state, and we have no idea how many Iowa women may have left the state to have their babies."

Dr. Norris explained that the teenager has the same fears of pregnancy as do many older women. She fears that her behavior may be violent while she gives birth, thus causing her to degrade herself. She fears that she will die, that her baby will be abnormal, that she will be disfigured, and that her sexual life will be interfered with (or, in some cases, *not* interfered with).

But her problems are likely to be more complicated than those of older women who are pregnant. The teenage girl is inexperienced. She may feel that she is being cheated of her youth. On top of it all—and especially if she is unmarried—she feels that she is condemned by society.

"The married teenage mother," said Dr. Norris, "may not be much better off than the unmarried teenage mother. She is likely to have married simply because she was pregnant, and even if she married for love, the chances are great that she and her husband have financial difficulties."

The significant physical aspects of teenage pregnancies were discussed by Dr. Donnelly and Dr. Charles A. White, an associate professor of obstetrics and gynecology. "A major difficulty," Dr. Donnelly commented, "is that teenage girls get little prenatal care. Twice as many premature babies born to teenagers die as do premature babies born to other women."

"Diets of teenagers are frequently poor," Dr. White pointed out. "Many girls are overweight when they begin their pregnancies, and they consume excessive amounts of salt, primarily because their diet includes large numbers of hamburgers and French fries." The other health problems of teenage pregnancy that he listed are toxemia, prolonged labor, an increased prematurity rate, an increased need for cesarean section, and an increased incidence of venereal disease, which is a growing problem in Iowa as well as elsewhere in the nation.

Morbidity Report for Month of October, 1965

Diseases	1965 Oct.	1965 Sept.	1964 Oct.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	275	117	316	Hancock, Johnson
Typhoid fever	0	0	1	
Smallpox	0	0	0	
Measles	43	14	19	Hamilton
Whooping cough	0	5	10	
Brucellosis	4	6	3	Black Hawk, Cherokee, Muscatine, Scott
Chickenpox	144	32	161	Dubuque, Hamilton, Palo Alto, Polk
Meningococcal meningitis	4	2	2	Boone, Iowa, Polk, Warren
Mumps	64	30	210	Polk, Winneshiek
Poliomyelitis	1	2	0	Palo Alto (delayed report)
Infectious hepatitis	23	18	47	Black Hawk, Palo Alto, Scott
Rabies in animals	17	15	33	All areas of the state
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	27	25	38	For the state
Syphilis	87	54	106	For the state
Gonorrhea	254	204	233	For the state
Histoplasmosis	2	3	1	Jackson, Wapello
Food intoxication	0	6	209	
Meningitis (type unspecified)	2	2	4	Dubuque, Winneshiek
Diphtheria carrier	0	0	0	
Aseptic meningitis	7	5	1	Clinton, Jackson
Salmonellosis	7	13	10	Polk
Tetanus	0	1	1	
Chancroid	0	0	0	
Encephalitis (type unspecified)	3	2	3	Washington
H. influenzal meningitis	1	1	1	Fayette
Amebiasis	3	1	2	Boone
Shigellosis	7	2	5	Scott, Wapello
Influenza	0	0	125	

The Iowa Medical Society Is Sponsoring the Creation of an

Areawide Health Facilities Planning Council

On October 27, during a meeting at which the Iowa Medical Society was host at its headquarters in Des Moines, representatives of a large number of professional and business groups, state-government agencies and voluntary health organizations agreed to form a Voluntary Areawide Health Facilities Planning Council.

The principal task of that Council will be to urge the formation of local or district voluntary health facilities planning groups. When it has done so, it will collect statewide data and supply it to those groups, it will assist them in setting guidelines for their work, and it will provide liaison between them and governmental agencies at the state and national levels.

Homer L. Skinner, M.D., of Carroll, chairman of the IMS Ad Hoc Committee on Voluntary Areawide Health Facilities Planning, was elected temporary chairman of the Council, and it was agreed that he should appoint a steering committee to develop specific recommendations regarding membership, functions, etc. He announced that when the steering committee has completed its work, it will present its recommendations at another meeting of representatives from the interested organizations.

The societies and agencies that sent delegates to the October 27 meeting were, in addition to the IMS, the Iowa Veterinary Medical Association, the Iowa Dental Association, the Iowa Farm Bureau Federation, the Iowa Taxpayers Association, Iowa Medical Service (Blue Shield), the State Department of Health, the American Cancer Society, Iowa Division, Inc., the State Department of Social Welfare, the University of Iowa College of Medicine, the State Board of Regents, the State Board of Control, the Iowa Nursing Home Association, the Iowa State Bar Association, the Greater Des Moines Chamber of Commerce, Blue Cross (Des Moines and Sioux City Plans), the Iowa Pharmaceutical Association, the Iowa Hospital Association, the Iowa Development Commission, the Health Insurance Council, the Iowa Nurses Association, the Iowa Society of Osteopathic Physicians and Surgeons, the Iowa League for Nursing, the Iowa Tuberculosis and Health Association and the Iowa Chapter of the Arthritis Foundation. Several others have indicated their interest and doubtless will participate.

WHY VOLUNTARY PLANNING?

The principal objectives of voluntary areawide health-facilities planning are (1) to help make sure that all phases of health care are available as generally as possible, and (2) to avoid duplications and thus to retard the increase in health-care costs. These purposes can be achieved by surveying existing facilities, making sure that adequate health services are within convenient distances of all people, that needless duplications are

avoided and that the type of care provided is commensurate with the need, and making sure that money is economically spent.

Despite the fact that many hospitals and other health-care institutions and services are non-governmental, a considerable majority of them are non-profit. Thus, attempts to advise and guide their boards of directors do not constitute interference with private enterprise as it is usually understood, since competition cannot be relied upon to hold costs down. Surplus beds, too many beds for the wrong kinds of patients, or other major wastes can create expenses that the public will be called upon to pay.

The funds now required for the construction and operation of hospitals for acutely-ill patients are staggering. According to Mr. George Bugbee, director of the program in hospital administration at the University of Chicago, it now costs $25,999 or more per bed to build a general hospital, and it is necessary to spend an additional $10,000 per bed per year to operate the hospital after it has been built. Civic pride in our various communities, and comparable motivations in the organizations that run private hospitals and other institutions need some restraint. Changing patterns in the treatment of diseases and other disabilities have, on one hand, necessitated the purchase of sophisticated equipment and the employment of carefully-trained paramedical staff members of many sorts, but have, on the other hand, shortened the periods of acute illness and rendered patients more promptly ambulatory and able to bathe themselves, go to dining rooms for their meals, etc., and thus to dispense with most bedside services. Consequently, general hospitals should be discouraged from buying and operating machinery that a neighboring hospital already has installed and can share, and minimum-care facilities of various types should be carefully distributed so that convalescence can be made less costly. Chronically-ill and/or senile patients can and should be cared for outside of general hospitals, and nursing or custodial homes for them should be similarly distributed.

Home-care homemaker arrangements, visiting-nurse programs, meals-on-wheels and other services designed to aid convalescents and marginally self-sufficient elderly people in their own homes should be created or extended wherever practicable. Such attention not only is less costly than hospital or nursing-home care, but is preferable on the grounds that most patients are happier at home and have a greater incentive to regain their health and self-reliance there.

There is some disagreement, at present, as to whether Iowa already has or is about to have too many nursing- and custodial-home beds. It may very well be that the problem is one of distribution. Those questions, like the others, are ones for local or district voluntary health-facilities councils to investigate, with whatever help the Areawide Council can give them.

The availability of financial assistance from the federal government for health-facilities planning by local groups is a complex topic. Such funds have been offered to areawide agencies for a considerable length of time and by December, 1964, there were 59 of them in the United States. In 1964, the Hill-Harris Amendments to the Hill-Burton Act authorized grants to state agencies to cover up to 50 per cent of the cost of developing, supervising and assisting regional, metropolitan and other projects for coordinating health and related facilities and services. They are a source from which communities can get half of the money they need in carrying out their planning activities. Pilot programs are now being set up in Polk, Scott and Woodbury Counties, in Iowa.

THE ALTERNATIVE IS REGIMENTATION

Health-facilities planning is a job that will be done on a compulsory basis unless organizations at or close to the community level make haste to do it voluntarily. In the coming years the federal government is to spend a great deal for health care of the elderly and certain other groups of patients, and if costs are excessive in some localities or if facilities are unjustifiably distributed, some hard and fast rules are sure to be set, with a consequent excess of red tape, an ignoring of extraordinary local needs, and a stifling of community initiative. Statewide health-facilities planning is already required by law in the State of New York.

The Advisory Council for Hospitals and Related Health Facilities, which approves or rejects applications for Hill-Harris funds now exercises a degree of control over the construction, renovation or improvement of health facilities that public and other non-profit groups in Iowa propose. But it accords top priority to communities having the lowest number of acute hospital beds, and in most instances has said merely "Yes" or "No." Its members are well disposed toward the creation of voluntary planning groups throughout the state.

Physicians and other public-spirited citizens of Iowa should look forward to the formation of the Areawide Health-Facilities Planning Council, then to the establishment of local or district councils, and finally—but not too far in the future—to their studies of health-care needs and of the ways in which they can best be met.

Iowa Chapter of the American Academy of General Practice

AAGP Policy Statements on Medicare

The Board of Directors of the American Academy of General Practice issued the following Academy policy statement: "The American Academy of General Practice, a professional association of family physicians dedicated to continuing education, in the future as in the past will seek to provide the highest quality of comprehensive medical care for America's families, including both the young and the aged.

"Historically, the Academy has vigorously opposed the intervention of the federal government in the provision of medical care. The enactment of the Social Security Amendments of 1965 (PL89-97) has created an environment that organized medicine may be living under for years to come.

"Having been enacted by the U. S. Congress and signed by the President, a medicare plan is now law. Hence the Academy should stand ready to confer with government agencies and others to assure that, under the law, our patients will continue to receive the highest possible quality of medical care without any interference with the vital personal relationship between family physicians and their patients.

"The Academy does not have the right to direct its individual members in the position they will take with respect to this new situation. Each member of the Academy must make his own decision as to the degree of his participation in the program. The efforts of the Academy are now being directed, through constructive leadership, toward ensuring adequate and proper representation for the family physician on the councils and advisory agencies created under regulations pursuant to the law."

At a recent SOC held in Kansas City, Board Chairman George E. Burket, Jr., M.D. of Kingman, Kansas, made the following statement:

"The President of the American Academy of General Practice made it quite plain that the Academy feels the American Medical Association should and must be the official spokesman for all of medicine, and that any attempt to destroy this unity could be a deterent to our cause. This does not, of course, mean that separate discussions regarding rules and regulations are not in order. But it does mean that it is absolutely imperative that final decisions and negotiations with HEW must be made by a unified organization of medicine, and not by fragmented groups seeking to better their own lot. In the days ahead, we should remind ourselves that the Academy of General Practice, with over 28,000 members, is the largest one segment of medicine within the AMA. With this group lies one of the hopes for unity in American medicine. This is a responsibility we cannot ignore; a charge we cannot fail."

Hospital Staffs to Get Handbook On Utilization Review

UTILIZATION REVIEW—A HANDBOOK FOR THE MEDICAL STAFF has been or shortly will be distributed by the American Medical Association to the chiefs of staff of all non-federal, short-term, and other special hospitals. Developed by the AMA's Department of Hospitals and Medical Facilities at the direction of the Committee on Medical Facilities of the Council on Medical Service, it is intended to assist in carrying out the recommendation that medical staffs of hospitals be urged and assisted to form utilization committees, as adopted by the AMA House of Delegates at the December, 1964, Clinical Convention. Copies of the handbook will also be furnished to state and local medical societies.

The handbook presents a collection of various references on utilization review. It includes the text of the July, 1965, revision of the GUIDE TO THE ESTABLISHMENT AND FUNCTIONING OF A MEDICAL STAFF UTILIZATION COMMITTEE prepared by the Hospital Utilization Project of Western Pennsylvania. It also includes a report on one county medical society's study of chart review as a technic for evaluating utilization. The report raises critical questions concerning this technic.

An approach developed in a Michigan study, in which utilization is judged on the basis of preestablished criteria, is described by one article in the handbook. Another article describes the value of any information system in reviewing utilization.

The diverse viewpoints expressed in the handbook are in keeping with the intent of the Committee on Medical Facilities not to "freeze the mold" in utilization review, but to encourage individual medical staffs to choose those approaches best suited to their situations and needs.

Iowa Association of Medical Assistants

Progress in Insurance Claim Forms

Realizing that all physicians and all medical assistants are busy, that they do not always read their respective publications, and also that some medical assistants in Iowa are not members of The American Association of Medical Assistants, we call attention to the identical articles bearing the above title in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (192:1010-1012, June 14, 1965) and THE AMERICAN ASSOCIATION OF MEDICAL ASSISTANTS BULLETIN (Vol. ix, No. 5, pp. 31-37, Sept.-Oct., 1965).

The articles explain the standardized Attending Physician's Statement form for insurance claims which has been developed by the Health Insurance Council in cooperation with the Committee on Insurance and Prepayment Plans of the AMA Council on Medical Service.

The Health Insurance Council is a federation of eight insurance associations whose member companies account for a majority of health insurance policies. The HIC serves as a central source of information and technical counsel to physicians, hospitals and allied health-care groups regarding the many aspects of health insurance.

Attempts at standardization began in 1951. Two lists of questions were prepared—one for group-insurance forms, and the other for individual-insurance claims. Then the insurance companies were asked to use the two lists in devising the forms they needed for their different types of protection. Although that arrangement permitted separate forms for various types of coverage, all variations had to conform to the specifications of the HIC and AMA.

In 1964, further simplification and standardization began. Variations between the group- and individual-insurance questionnaires were eliminated, and the forms were made applicable to all types of health insurance. They now carry standardized questions in a prescribed sequence, an authorization for release of information, and an authorization for payment direct to the physician.

Despite the increasing volume of insurance claims being processed in physicians' offices, standardization and simplification can lessen the work load of the aide to whom this task is delegated. Those of us who have completed any quantity of Blue Shield forms realize how much easier they are to complete because they are standardized and take less of our time than do the same number of differing forms.

The J.A.M.A. and BULLETIN articles also contain questions and answers designed to inform us of the use that must be made of the information requested.

A letter I just received from Mrs. Rose Merritt, a past-president of AAMA, enclosed a pamphlet published by HIC which explains the program in detail. For further information, we suggest you request a copy from the HIC staff representative for this area, Mr. Norman D. Steingraber, Asst. Director, Health Insurance Council, 332 S. Michigan Avenue, Chicago, Illinois 60604.

Quantities of the forms can be purchased from printing companies handling such materials. Ask for "Attending Physician's Statement-Health Insurance Claim—Group or Individual," designated as COMB-1. Samples can be obtained from HIC.

—*Helen G. Hughes*

Automobile Seat Belts

At the recent meeting of the American College of Surgeons, in Atlantic City, Dr. Elliott S. Hurwitt, of the Albert Einstein College of Medicine, noted that there is a growing but still comparatively small number of internal injuries resulting from the use of automobile seat belts. He suggested that it is possible that many such injuries can be avoided through a proper placing and adjusting of the belts, for he recalled that some belt-related traumas had been due to wearing the belt across the abdomen instead of across the pelvis, and leaving it loose rather than having it snug.

His ideas were echoed by Dr. H. Thomas Ballantine, Jr., of the Harvard Medical School. Dr. Ballantine said that of 43,000 traffic-accident deaths in the U. S. in 1963, about 30,000 resulted from head injuries. About 18,000 of them, he said, could have been prevented by properly-worn seat belts.

The two men agreed that in all instances seat-belt injuries are less serious than the head injuries would have been.

Woman's Auxiliary News

The Story of the Christmas Guest

Adapted by Helen Steiner Rice from an Old German Legend

It happened one day at the year's white end . . .
Two neighbors called on an old-time friend . . .
And they found his shop so meager and mean . . .
Made gay with a thousand boughs of green . . .
And Conrad was sitting with face a-shine . . .
When he suddenly stopped as he stitched a twine . . .
And said "Old friends, at dawn today . . .
When the cock was crowing the night away . . .
The Lord appeared in a dream to me . . .
And said, 'I am coming your guest to be' . . .
So I've been busy with feet astir . . .
Strewing my shop with branches of fir . . .
The table is spread and the kettle is shined . . .
And over the rafters the holly is twined . . .
And now I will wait for my Lord to appear . . .
And listen closely so I will hear . . .
His step as He nears my humble place . . .
And I open the door and look in His face" . . .
So his friends went home and left Conrad alone . . .
For this was the happiest day he had known . . .
For, long since, his family had passed away . . .
And Conrad has spent a sad Christmas Day . . .
But he knew with the Lord as his Christmas guest . . .
This Christmas would be the dearest and best . . .
And he listened with only joy in his heart . . .
And with every sound he would rise with a start . . .
And look for the Lord to be standing there . . .
In answer to his earnest prayer.
So he ran to the window after hearing a sound . . .
But all that he saw on the snow-covered ground . . .
Was a shabby beggar whose shoes were torn . . .
And all of his clothes were ragged and worn . . .
So Conrad was touched and went to the door . . .
And he said, "Your feet must be frozen and sore . . .
And I have some shoes in my shop for you . . .
And a coat that will keep you warmer, too" . . .
So with grateful heart the man went away . . .
But as Conrad noticed the time of day . . .
He wondered what made the dear Lord so late . . .
And how much longer he'd have to wait . . .
Then he heard a knock and ran to the door . . .
But it was only a stranger once more . . .
A bent, old crone with a shawl of black . . .
A bundle of faggots piled on her back . . .
She asked for only a place to rest . . .
But that was reserved for Conrad's Great Guest . . .
But her voice seemed to plead, "Don't send me away . . .
Let me rest for a while on Christmas Day" . . .
So Conrad brewed her a steaming cup . . .
And told her to sit at the table and sup.
But after she left he was filled with dismay . . .
For he saw that the hours were passing away . . .
And the Lord had not come as He said He would . . .
And Conrad felt sure he had misunderstood . . .
When out of the stillness he heard a cry . . .
"Please help me and tell me where am I" . . .
So again he opened his friendly door . . .
And stood disappointed as twice before . . .
It was only a child who had wandered away . . .
And was lost from her family on Christmas Day . . .
Again Conrad's heart was heavy and sad . . .
But he knew he should make this little girl glad . . .
So he called her in and wiped her tears . . .
And quieted all her childish fears . . .
Then he led her back to her home once more . . .
But as he entered his own darkened door . . .
He knew that the Lord was not coming today . . .
For the hours of Christmas had passed away . . .
So he went to his room and knelt down to pray . . .
And he said, "Dear Lord, why did you delay . . .
What kept you from coming to call on me . . .
For I wanted so much your face to see" . . .
Then soft in the silence a voice he heard . . .
"Lift up your head for I kept my word . . .
Three times my shadow crossed your floor . . .
Three times I came to your lonely door . . .
For I was the beggar with bruised, cold feet . . .
I was the woman you gave to eat . . .
And I was the child on the homeless street."

United Nations

Dr. and Mrs. Olin Elliott attended the Governor's United Nations Observance, held in the House of Representatives Chamber at the State Capitol on October 27, 1965. This was the United Nations' twentieth anniversary program, with Ambassador James Roosevelt as speaker. A shocking fact announced by Ambassador Roosevelt was: The budget of the United Nations is less than that of the Sanitation Department of the City of New York.

If you move or have a change of address, please fill this out.

Send it to: Mrs. Hazel T. Lammey, 529-36th Street, Des Moines, Iowa 50312.

Mrs. .....
Last Name — Husband's First Name & Middle Initial

.....
Street Address

.....
City — County — State — Zip Code

Mental Health

Mental Health was one of the topics at the Regional Workshop in Chicago, October 13-14, because of the AMA's belief that it is one of the Auxiliary's programs that are of prime importance at this time.

The new national Mental Health chairman is Mrs. Hamilton Ford, of Galveston, Texas. In the general session she stressed that we should examine our own members to determine whether they are knowledgeable about mental health. Many of us still need information. Cobwebs in our attitudes about mental illness can be swept away only by knowledge.

Mrs. Ford mentioned the importance of volunteer service in our own communities—for example, providing recreational programs for patients in county homes and nursing homes. She asked whether, as physicians' wives, we could handle emergency situations, such as a call from a patient who is threatening suicide. Would you know what to do?

It was suggested that county Auxiliaries examine their local mental health facilities. Mrs. Ford stressed the importance of having physicians' wives serve on the boards of directors of mental health centers and related facilities. This is already a reality in a few places in Iowa.

In the mental health discussion group, various topics were presented: (1) home and school difficulties, including the problems of retarded and emotionally disturbed children; (2) effective use of "Milestones to Maturity," not only in high schools but in church youth groups, Senior Scouts, etc.; (3) a suicide-prevention program; (4) community mental health centers and the importance of local care for the mentally ill. In light of federal legislation making available matching funds for the construction of such centers and money for their initial staffing, it is important for Auxiliary members to know the situation in Iowa. Our 16 mental health centers have *community based financing* and medical orientation. Clinics are co-sponsored by the county medical societies.

Ever present is the need for personnel. Auxiliary mental health and health careers committees might well work together in stressing the vast opportunities for young people in the areas of psychiatry, psychology, psychiatric social work, nursing, occupational and recreational therapy, etc.

A great deal of material was displayed at the Workshop—pamphlets, books, records, films. Please write for whatever you need.

Mrs. Robert Garrard, former national Mental Health chairman, reported on the project of preparing a directory of local mental health facilities. Despite its importance, this has not progressed very far. Iowa's Wapello County Auxiliary deserves special recognition as one of two in the entire country which have completed this project. It was originally requested of the Auxiliary by the AMA Council on Mental Health. Since there is no deadline, we once again ask you to consider it. The yellow sheets telling how are still available.

—MRS. B. R. GOLDMAN
2140 Fairhaven Rd.
Davenport, Iowa

Community Service

Health Education—this is the weapon we can use to slay "the dragon of ignorance" about good, sound physical mental and social well being. Through our Community Service we can use the abundant materials available from the AMA and the National Auxiliary to provide the best in health education. This was the message to be derived from the Regional Workshop held in Chicago, on November 13 and 14, 1965, by those interested in Community Service.

In addition to the projects itemized in the letter we sent to each county president and Community Service chairman, several suggestions were offered whereby we, as individuals, can promote better health education in our respective communities.

- Civic, service, business and other community groups should be urged to purchase and use display racks into which can be placed pamphlets on health and safety.
- Health posters in sets of 12—one for each month—would help to spruce up any office, school, factory or other public place.
- TODAY'S HEALTH GUIDE is a book that belongs in every junior and senior high school, university and public library. It contains 640 pages of colorfully illustrated family-health instruction, covering 2,000 medical problems, and it is written in laymen's terms.
- Subscriptions to the magazine TODAY'S HEALTH make excellent Christmas gifts.

How can you help? Compile a list of all those in your community who you think would be interested in receiving information about AMA Health Education Materials. Send your list to Mr. Jack Casurella, at the AMA, 535 North Dearborn Street, Chicago 60610. If you wonder what types of organizations to contact, or whom to suggest, here are a few: banks and savings and loan associations; schools, hospitals and clinics; YMCA's, Boy Scouts, Girl Scouts, Campfire Girls and other youth groups; train or bus depots and airports; local service clubs such as the Elks, Kiwanis, Lions, Rotary; doctors and nurses; personnel, public-relations, advertising and marketing executives; plant and office managers; teachers, coaches and youth-group leaders; wholesalers and retailers; and PTA officers. These are only leads. Don't be limited by them; you can undoubtedly think of others.

HEALTH EDUCATION IS THE KEY TO GOOD HEALTH!

—FLORENCE IRVING, *Chairman*

AMA-ERF

Attending the AMA-ERF Regional Workshop, held in Chicago October 13 and 14, was a stimulating experience. The twelve states in the North Central Region were represented, and the exchange of ideas among the twelve chairmen was most helpful.

Iowans increased their giving to AMA-ERF last year by 42.78 per cent. However, much remains to be done. We rank second from the bottom among Auxiliaries with memberships between 1,000 and 1,500, and second from the bottom in the North Central Region.

What can we do to improve our standing? First of all, do all our members know that AMA-ERF is the *only* money-raising project sponsored by the Auxiliary to the American Medical Association? Do you have a program each year in your county meeting explaining the ERF program, so that each member understands the Loan Guarantee Fund and the Funds to Medical Schools program? Are they all aware of the various fund-raising methods such as the sale of Medallion Christmas cards, of note paper, of In Memoriam cards, of In Appreciation cards, of AMA-ERF playing cards, and of medical or state charms?

We have seven months left to improve our standing. We are running behind by over one hundred dollars from our giving last year. Please order your Christmas cards from Medallion, and support all of the fund-raising projects your Auxiliary sponsors.

—MRS. R. L. WICKS

Health Education Loan Fund

The Health Education Loan Fund Committee granted seven new loans this summer, and one girl is now completing her application for a loan to begin in January. Applications are now starting to come in for next fall. Of the seven loans granted this year, five were for $1,000 each, one was for $500 and one was for $350. Our loans are limited to $1,000 so that a large number of girls can be helped.

We now have 18 girls in school. Five girls completed payments on their notes during the past year. Three of them had graduated, and two had dropped out for health reasons. At the present time, four girls are making regular payments. Two of them have graduated and are sending as much as $100 per month in order to pay off as much as possible before the interest begins. (On the darker side, we still have one delinquent and one very slow payer.) To give you a complete picture, I can mention that we are now on loan No. 72. Forty-seven loans have been repaid in full.

This Committee would like to express its thanks to the local Auxiliaries for their support, both financially and in recommending girls for loans. We appreciate your investigations and recommendations, and depend upon you to evaluate each applicant carefully. The drop-out is usually the girl who presents a problem as regards repayment of her loan. The girl who completes her training is a joy, for she invariably is prompt in repaying her loan and is grateful to the Auxiliary for helping make nurse's training possible for her. So again we remind you that we are looking forward to your local Auxiliary contributions this year, and to your husbands' checks for tickets to the Eleventh Annual Benefit Dance. The doctors will be hearing from the HELF Committee at a later date.

—MRS. JOE G. FELLOWS, *Treasurer*
Health Education Loan Fund

News From Around the Hawkeye State

Black Hawk County

Black Hawk County Medical Auxiliary started its year's program with an honored guest speaker, state president-elect Mrs. S. M. Korson, and with her Mrs. Tenney of Independence, Iowa. Everyone enjoyed and learned a great deal from her talk.

October started with a full calendar. For the ten days of the Dairy Cattle Congress, Auxiliary members manned the Medical Society booth titled, "Medical Quackery." That over, they spent three days in each two weeks at the visual screening of four year olds. Of 310 children screened, four were referred. Thirty children from a private nursery school were screened by the mothers of three of the children in attendance.

The November meeting will be "Specialties from Our Kitchen," and will be a silent auction. Proceeds will go to AMA-ERF. Orders are being taken for Medallion Christmas cards and stationery.

Some of the members of the Auxiliary have signed up to help at the Immunization Clinics held the last Saturday of each month.

MRS. R. D. BUCKLES, *President*

Boone County

To stimulate interest in and disseminate information regarding health careers, The Boone County Medical Auxiliary held a tea Friday, October 22 at the Boone Golf and Country Club.

To this tea, along with their advisors, invitations were sent to those girls in the junior and senior classes who had indicated an interest in health professions. The following high schools were represented: Grand Community, Boxholm; Madrid High School, Madrid; Ogden Community High School, Ogden; United Community, Luther; and Sacred Heart and Boone High Schools, Boone. Invitations were extended to approximately 100 guests.

Mrs. A. W. Puntenney, president of the Auxiliary, welcomed the group and introduced the guest speakers. Interesting and informative talks about the life of a student nurse were given by

Miss Diane Tingwald, a freshman at Iowa Lutheran Hospital, Miss Sandra Nickell, a junior at Mercy Hospital, and Miss Sue Radnich, a junior at Iowa Methodist Hospital, all in Des Moines.

In addition, representatives from the following health professions were present to visit with the girls and to answer any questions they might have: medical technology, physiotherapy, x-ray, dietetics, medical records.

Refreshments were served from a beautifully appointed table with Mrs. B. T. Whitaker and Mrs. Lyle Poyzer presiding. Mrs. R. L. Wicks served as general chairman of arrangements for the tea, and she was assisted by the following committees: speakers, Mrs. A. W. Puntenney; invitations, Mrs. J. C. Herman, Mrs. W. H. Longworth, and Mrs. R. A. Manderscheid; refreshments, Mrs. M. G. Sloan, Mrs. E. E. Linder, and Mrs. G. H. Sutton; table arrangements, Mrs. J. M. Wall, Mrs. D. L. Cross, and Mrs. W. E. Rouse; hostesses and scholarships and loan information, Mrs. W. G. Dennert, Mrs. L. R. Greco, Mrs. T. K. Leonard, Mrs. T. E. Kane, Mrs. A. B. Deering, and Mrs. R. E. Gunn.

We have found it very effective to arrange the chairs in circles around the student nurses and representatives of the other health professions, in order that our guests may have opportunities to meet them personally and to ask any questions they wish, as they are enjoying their refreshments after the more formal part of the program.

MRS. A. W. PUNTENNEY, *President*

Buchanan County

The Buchanan County Medical Auxiliary is sponsoring a new health careers club in Winthrop, Iowa. It is also working with the previously organized club at the high school in Independence. The latter group was invited to an open house at St. Luke's Hospital, Cedar Rapids. Auxiliary members helped with the transportation. The Auxiliary also worked with them on a tea, on October 26, for the purpose of attracting new members. The membership in the club at Independence has grown to 25.

On October 1 and 2, the Auxiliary held a garage sale and realized a profit of $170.00. A substantial portion of that sum will go to AMA-ERF.

On October 23, the Auxiliary held its benefit card party. Ticket sales totaled $247.50. Although the expenses are not all in at this writing, the profit should amount to over $200.00. It will be used for the Auxiliary's contribution to the local hospital, to the Special Education classes, and to AMA-ERF.

The AMA-ERF Christmas card sales have increased in Buchanan County this year, probably because of the better selection of cards and of their early arrival.

MRS. P. H. TENNEY, *President*

Johnson County

The first meeting of the Johnson County Auxiliary was held on Tuesday, October 19, at the University Athletic Club. It consisted of a style show by Frankel's and a luncheon. After the style show there was a brief business meeting to acquaint the members with the various interest groups.

The Auxiliary's primary goal for the year is to increase membership, and each member will be contacted by telephone for each meeting. We are looking forward to programs of interest, and hope that attendance will greatly increase.

MRS. W. J. TEGLER, *President*

Marion County

The Marion County Medical Auxiliary has welcomed two new members, making a total membership of 22.

In September, the Knoxville community suffered the tragic death of Dr. Yme Sloterdyk, husband of our last year's president. Preceding the funeral, the Auxiliary served lunch to the family and close friends.

The County Home held its annual open house early in October, and for that occasion the Auxiliary furnished cookies for the coffee hour.

In October, the Marion County doctors' wives invited the Mahaska County Auxiliary to a luncheon and to view the film, "Project Hope," with them. They also issued an open invitation to the public to se the film (and had an approximate attendance of 50), after which they served coffee and cookies. Several contributions were given to be sent to Project Hope, along with 10 "Johnny" coats and six office coats donated by one of our members. The local theatre manager, Carl Schwanabeck, donated his time and the use of his theatre for the film showing. It was also shown at the Veterans Hospital for the benefit of the employees. Mrs. Ralston is to be commended for her diligent effort in making it possible for our community to learn more about the Good Ship Hope.

We shall continue to help with civic projects in which we have the capacity to serve.

MRS. R. R. MCCLUNG, *President*

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. Henry Boe, 3919 Orchard Street, Sioux City 51104

President-Elect—Mrs. S. M. Korson, Box 111, Independence 50644

Recording Secretary—Mrs. L. H. Prewitt, 33 Birchwood Hills, Ottumwa 52501

Corresponding Secretary—Mrs. H. C. Leiter, 2400 E. Solway, Sioux City 51104

Treasurer—Mrs. B. M. Merkel, 730 Polk Boulevard, Des Moines 50312

Editor of THE NEWS—Mrs. J. F. Veverka, Prairie City 50228

Co-Editor—Mrs. R. R. Carlson, 826 Sherman Drive, Ankeny 50021

THE JOURNAL
of the
Iowa Medical Society

Index to Volume LV • Numbers 1-12 • 1965

Abdominal pain in childhood, James Marvin Baty, M.D. 681
Aborting staph epidemics in newborn nurseries 222
Abortion, management of missed, Charles A. White, M.D. 461
Academy of Pediatrics, recommendations from 156
Actions of AMA House of Delegates, Chicago, Feb. 6-7, 1965 151
Actions of AMA House of Delegates, Miami Beach, Nov. 21-Dec. 2, 1964 36
Actions of AMA House of Delegates, New York meeting 494
Actions of the 1965 General Assembly were mostly good, as regards health subjects ..... facing p. 390
Acute pyelonephritis, severe, left; chronic pyelonephritis, bilateral (UI-CPC) 701
Adenoma, large aneurysm of internal carotid artery simulating eosinophilic, Kazem Fathie, M.D. 246
Adequate infertility investigation, James P. Jacobs, M.D. 119
Adolescent menstrual problems (among ads in July issue)
Advances in the management of blood diseases 656
Adverse drug-reaction symposium (among ads in May issue)
After-care homes, report on survey of attitudes of physicians with patients in, Herbert L. Nelson, M.D. . 215
Aged, mononucleosis in, Roy W. Overton, M.D., and William Shutze, M.D. 18
Alcoholic addiction, ten commandments for the prevention of 516
Alcoholic patients, social characteristics of 100, John Clancy, M.D., and Richard Vornbrock, ACSW 235
All physicians should attend annual meeting of IMS, ... facing p. 220
Alternative technic for finding coronary-prone (Editorial) 537
AMA campaign against rising VD 601
AMA clinical convention in Philadelphia 593
AMA-ERF loan program for medical students 290
AMA environmental health congress 82
AMA House of Delegates, actions of, Chicago, Feb. 6-7, 1965 151
AMA House of Delegates, actions of, Miami Beach, Nov. 21-Dec. 2, 1964 36
AMA House of Delegates, actions of, New York 494
AMA, 1965 annual meeting of, Donovan F. Ward, M.D. . 202
AMA suggestions for reform of boxing 492
AMA to issue family health guide (among ads in January issue)
AMA will issue birth-control information to M.D.'s 96
Amputation for diabetic gangrene (Editorial) 142
Amyotrophic lateral sclerosis, severe, with emaciation (UI-CPC) 371
And freely speak, Philip D. Jordon, Ph.D. 557
Anesthesia and ischemic heart disease (Editorial) 143
Aneurysm, large, of internal carotid artery simulating eosinophilic adenoma, Kazem Fathie, M.D. 246
Ankle, treatment of the fractured, W. R. Hamsa, M.D., and D. W. Burney, Jr., M.D. 353
Annual meeting of IMS, 1965, all physicians should attend ..... facing p. 220
Annual meeting program, 1965, IMS 105
Anorectal surgery, management of pain in, Ralph H. Riegelman, M.D. 310
Antibiotics can hinder more than help (Editorial) 85
Anticoagulants for elderly accident patients (Editorial) . 84
Aorta, trauma to the thoracic, Montague S. Lawrence, M.D., and Johann L. Ehrenhaft, M.D. 637
Aortic stenosis, and mitral stenosis and insufficiency (by clinical history, rheumatic heart disease with tricuspid stenosis (UI-CPC) 479
Are we our brother's keeper? (Editorial) 487
Areawide health facilities planning council, Iowa Medical Society is sponsoring the creation of an .. facing p. 722
Arteriography, renal, by the percutaneous transfemoral catheter method, Steven H. Cornell, M.D. 569
Asthenia, neurocirculatory (Editorial) 140
Atherosclerotic coronary heart disease, risk of, Willard A. Krehl, M.D., Ph.D., and Robert E. Hodges, M.D. 177
Atypical depressive illnesses, Garfield Tourney, M.D., Peter G. S. Beckett, M.D., and Jacques S. Gottlieb, M.D. 253
Autoimmune disease, Giles A. Koelsche, M.D., and George R. Green, M.D. 528
Automobiles, safer (Editorial) 597
Automobile seat belts 724
Autopsies 604
Avoidance of catheter infections (Editorial) 490

Back to nature! (Editorial) 325
Barbiturate record-keeping requirements 686
Baths, postpartum tub (Editorial) 540
Baty, James Marvin, M.D., Abdominal pain in childhood 681
Bean, William B., M.D., Notes on gold-headed cane 172
Beattie, John L., M.D., Spontaneous rupture of the rectus abdominis muscle 696
Beckett, Peter G. S., *et al.*, Atypical depressive illnesses . 253
Bell, William E., M.D., Clinical approach to certain postnatally acquired causes of mental retardation 60
Bernstein, Leslie, M.D., D.D.S., Etiology and management of epistaxis 9
Biliary tract, surgery of the: a symposium 687
Birth-control information to M.D.'s, AMA will issue 96
Blank Memorial, Ninth, pediatric conference 71
Bleeding from the duodenum caused by adenoma of Brunner's glands, E. J. Drew, M.D. 368
Blood diseases, advances in the management of 656
Blue Cross visiting-nurse benefits 500
Bone marrow, hypoplasia of, severe, with pancytopenia, (UI-CPC) 651
Bowen, Howard R., Ph.D., Next twenty years in higher education 349
Boxing, AMA suggestions for the reform of 492
Brand names in prescriptions, JAMA urges use of 145
Breast engorgement, reappraisal of estrogen therapy for (Editorial) 711
Brunner's glands, bleeding from the duodenum caused by adenoma of, E. J. Drew, M.D. 368
Bunge, R. G., M.D., Male infertility 125
Burney, D. W., Jr., M.D., and W. R. Hamsa, M.D., Treatment of the fractured ankle 353
Bynum, W. Turner, M.D., Should we alter our perspective about gastric malignancy? 5

Cancer, itching may be a sign of 500
Cane, notes on gold-headed, William B. Bean, M.D., ... 172
Cardiovascular disease in Iowa, Jason B. Lipkind, M.D. . 469
Care of the feet of the rheumatoid patient, Carroll B. Larson, M.D. 68
Carpender, J. W. J., M.D., Radiation therapy and your patient 621
Carter, Burdellis L., R.N., and Robert B. Kugel, M.D., Lack of immunization among elementary school children; study conducted in Iowa City 1
Case against typhoid immunizations during flood periods, J. H. Sunderbruch, M.D. 478
Catheter infections, avoidance of (Editorial) 490
Caveat Emptor! (Editorial) 492
Changing concepts in osteoporosis, David D. Hunt, M.D. 563
Changing concepts in RH isoimmunization, Clifford P. Goplerud, M.D. 187
Cheatham, J. S., M.D., and M. Don George, M.D., Munchausen's syndrome; case report and brief discussion . 20
Chemotherapy of cavitary tuberculosis, untoward reactions to drugs used in initial 332
Chickenpox, theory about endemic character of (Editorial) 271
Child, hyperactive, Gerald Solomons, M.D. 464
Child psychiatry in Des Moines, residency program in .. 290
Childhood, thyrotoxicosis in (Editorial) 87
Children, lack of immunization among elementary school; study conducted in Iowa City, Burdellis L. Carter, R.N., and Robert B. Kugel, M.D. 1
Children, tell the truth to 300
Chloramphenicol must be used with care (Editorial) 713
Chloramphenicol, preventive for toxic effects of (Editorial) 198
Cigarette smoking (Editorial) 537
Cirrhosis, postnecrotic type (UI-CPC) 260
Civil defense notes 157
Clancy, John, M.D., and Richard Vornbrock, ACSW, Social characteristics of 100 alcoholic patients 235
Cleft lip and palate, congenital pits of the lower lip associated with: a case report, William H. Olin, D.D.S., M.S., William C. Huffman, M.D., and James W. Schweiger, D.D.S., M.S. 698

Clifton, James A., M.D., and Thomas H. Kent, M.D., Malabsorption syndrome in Iowa 643
Clinical approach to certain post-natally acquired causes of mental retardation, William E. Bell, M.D. 60
Clinical impressions of external otitis, Ephraim L. Manning, M.D. 129
Clinical Pathologic Conference, U. of I. College of Medicine 22, 75, 132, 189, 260, 316, 371, 479, 588, 651, 701
Clinicopathologic conference, Mercy Hospital 522
Coming meetings 35, 83, 150, 203, 283, 337, 385, 497, 545, 594, 658, 718
Communication between physician and dentist, James H. McLeran, D.D.S., M.S. 579
Complete and thorough physical examination (Editorial) 200
Comprehensive mental health care, Paul E. Huston, M.D. 55
Congenital pits of the lower lip associated with cleft lip and palate: a case report, William H. Olin, D.D.S., M.S., William C. Huffman, M.D., and James W. Schweiger, D.D.S., M.S. 698
Continued decline in prices of drugs 486
Contraceptives, statement on intrauterine (among ads in May issue)
Conway, Judge Byron B., Juvenile delinquency 457
Convalescence, role of the patient in surgical, Fred T. Kolouch, M.D., Ph.D. 363
Cornell, Steven H., M.D., Renal arteriography by the percutaneous transfemoral cathether method 569
Coronary artery disease, prevention of (Editorial) 491
Coronary heart disease, risk of atherosclerotic, Willard A. Krehl, M.D., Ph.D., and Robert E. Hodges, M.D. 177
Coronary-prone, alternative technic for finding the (Editorial) 537
Culturally underprivileged, education for (Editorial) .. 141
County medical society officers 456
Cupulometry, vestibular caloric testing and, Bosko Milojevic, M.D., Sc.D. 249
Current therapy in cystic fibrosis (among ads in March issue)
Cystic fibrosis 593
Cystic fibrosis, current therapy in (among ads in March issue)

Deafness and the temporal bone banks program (Editorial) 662
Dean, greetings from 171
Deaths (among ads in each issue)
Deaths from uterine cancer in Iowa could have been prevented, most of these 1963 204
Deaths: maternal, Iowa 1952-1961, Madelene M. Donnelly, M.D. 475
Delinquency, juvenile, Judge Byron B. Conway 457
Dentist, communication between physician and, James H. McLeran, D.D.S., M.S. 579
Depressive illnesses, atypical, Garfield Tourney, M.D., *et al.* 253
Diabetic gangrene, amputation for (Editorial) 142
Diabetics, hypothyroidism in (Editorial) 712
Diabetes, mellitus, neurologic complications of: symposium, M. W. VanAllen, M.D., *et al.* 239
Diabetes mellitus, observations on recognition of prediabetes and, Patrick D. Robertson, M.B., and Daniel B. Stone, M.B. 181
Diabetic patient, pregnancy in (Editorial) 269
Digesting our knowledge (Editorial) 660
Disease that never was, the 608
Distribution of health-care dollar, 1943, 1953, 1963 201
Doctor's Business 45, 94, 154, 221, 285, 344, 391, 503, 555, 603, 664, 719
Donnelly, Madelene M., M.D., Maternal deaths: Iowa, 1952-1961 475
Draft rejectees, remedial care for (among ads in September issue)
Drew, E. J., M.D., Bleeding from the duodenum caused by adenoma of Brunner's glands 368
Drugs and pregnant patient (Editorial) 199
Drugs, continued decline in prices of 486
Dyspnea, evaluation of, Arthur M. Olson, M.D. 513
Dystrophy, muscular 220

Eclampsia (UI-CPC) 75
Ecology of rabies, résumé of Iowa symposium on 38
Education for culturally underprivileged (Editorial) 141
Education, next twenty years in higher, Howard R. Bowen, Ph.D. 349
Education program, health occupations 536
Effects of loss of a parent 546
Ehrenhaft, Johann L., M.D., Surgical management of some common lung lesions 517
Ehrenhaft, Johann L., M.D., and Montague S. Lawrence, M.D., Trauma to the thoracic aorta 637
18th AMA National Rural Health Conference 279
Elderly accident patients, anticoagulants for (Editorial) 84
Embolism, treatment of fat (Editorial) 33
Environmental health congress, AMA 82
Epidemics of whooping cough can still occur (Editorial) 661
Epidermoid carcinoma of larynx, post-irradiation (UI-CPC) 189
Epistaxis, etiology and management of, Leslie Bernstein, M.D., D.D.S. 9
Erythroblastosis fetalis, fetal transfusions in (Editorial) 661
Estrogen therapy for breast engorgement, reappraisal of (Editorial) 711
Ethics, law and 213
Etiology and management of epistaxis, Leslie Bernstein, M.D., D.D.S. 9
Evaluation of dyspnea, Arthur M. Olson, M.D. 513
Every doctor's wife should be a member of Woman's Auxiliary to Iowa Medical Society ..... facing p. 158
Executive Council, IMS, January sessions 147
Experimental pneumonia vaccine (among ads in May issue)
External otitis, clinical impressions of, Ephraim L. Manning, M.D. 129

Family health guide, AMA to issue (among ads in January issue)
Fat embolism, treatment of (Editorial) 33
Fathie, Kazem, M.D., Large aneurysm of internal carotid artery simulating eosinophilic adenoma 246
Feet, care of in the rheumatoid patient, Carroll B. Larson, M.D. 68
Fetal transfusions in erythroblastosis fetalis (Editorial) 661
Fifty Year Club members 449
Final steps in eradicating tuberculosis (Editorial) 541
Fincham, R. W., M.D., *et al.*, Neurologic complications of diabetes mellitus: symposium 239
Fish story that is no fish story (Editorial) 84
Fluoridation, new triumph for (Editorial) 34
For your bulletin board (Editorial) 144
Football practice, health hints for 543
Fractured ankle, treament of the, W. R. Hamsa, M.D., and D. W. Burney, Jr., M.D. 353
Fractures of hip, mortality in (Editorial) 197
Fractures, nonunion of (Editorial) 269
Freely speak, and, Philip D. Jordan, Ph.D. 557
Future M.D. supply (among ads in January issue)

Gangrene, diabetic, amputation for (Editorial) 142
Gas gangrene, prevention of (Editorial) 379
Gastric malignancy, should we alter our perspective about, W. Turner Bynum, M.D. 5
Gastric perforation, neonatal spontaneous, with survival, Paul A. LaPorte, M.D., and Ralph E. Woodard, M.D. .. 72
George, M. Don, M.D., and J. S. Cheatham, M.D., Munchausen's syndrome, case report and brief discussion .. 20
Gold-headed cane, notes on, William B. Bean, M.D. 172
Goplerud, Clifford P., M.D., Changing concepts in RH isoimmunization 187
Gottlieb, Jacques S., M.D., *et al.*, Atypical depressive illnesses 253
Gout, present-day diagnosis and treatment of, L. Maxwell Lockie, M.D. 65
Green, George R., M.D., and Giles A. Koelsche, M.D., Autoimmune disease 528
Greetings from Dean 171
Guidelines for school health 543

Halpin, Lawrence J., M.D. 206
Hamsa, W. R., M.D., and D. W. Burney, Jr., M.D., Treatment of the fractured ankle 353
Health-care betterment, organized medicine at all levels conducts continuing programs for ..... facing p. 554
Health-care dollar, distribution of, 1943, 1953, 1963 201
Health guide, AMA to issue family (among ads in January issue)
Health hints for football practice 543
Health-occupations education program 536
Heart disease, ischemic, anesthesia and (Editorial) 143
Hemosiderosis, transfusion, D. T. Kaung, M.D. 312
Hemothorax, massive (UI-CPC) 22
Herpes zoster, prednisone for (Editorial) 32
Higher education, next twenty years in, Howard R. Bowen, Ph.D. 349
Hip, fractures of, mortality in (Editorial) 197
Hodges, Robert E., M.D., and Willard A. Krehl, M.D., Ph.D., Risk of atherosclerotic coronary heart disease .. 177
Home medication, practical control of (Editorial) 596
Homografts (Editorial) 660
Hospital system collapse, Philadelphia doctors warn of (among ads in January issue)
House of Delegates, AMA, actions of in Miami Beach Nov. 21-Dec. 2, 1964 36
House of Delegates, index to the minutes of the 1965 IMS 451
House of Delegates of Iowa Medical Society is true voice of Iowa physicians ..... facing p. 288
House of Delegates, minutes of the 1965 sessions of the 397
Huffman, William C., M.D., William H. Olin, D.D.S., M.S., and James W. Schweiger, D.D.S., M.S., Congenital pits of the lower lip associated with cleft lip and palate: a case report 698
Hunt, David D., M.D., Changing concepts in osteoporosis 563
Huston, Paul E., M.D., Comprehensive mental health care 55
Hyperactive child, Gerald Solomons, M.D. 464
Hypertension, pity the unfortunate patient with 578
Hypoplasia of bone marrow, severe, with pancytopenia (UI-CPC) 651
Hypothyroidism in diabetics (Editorial) 712

Immunization, lack of, among elementary school children; study conducted in Iowa City, Burdellis L. Carter, R.N., and Robert B. Kugel, M.D. 1
Immunizations during flood periods, case against typhoid, J. H. Sunderbruch, M.D. 478
Immunizations, physicians want to help their patients individually to maintain adequate ..... facing p. 338
Immunizations, shortcomings of Omaha (Editorial) 325
IMS annual meeting program 1965 105
IMS Executive Council, January sessions 147
IMS officers and committees 453
In the public interest ..... facing pages 48, 96, 158, 220, 288, 338, 390, 508, 554, 602, 664, 722
Index to the minutes of the 1965 IMS House of Delegates 451
Infection, respiratory syncytial virus, F. Howell Wright, M.D. 301

Infections, avoidance of catheter (Editorial) 490
Infertility and Endocrinology, U. of I. conference on ... 89
Infertility investigation, adequate, James P. Jacobs, M.D. 119
Infertility, male, R. G. Bunge, M.D. 125
Infertility, psychological aspects of, A. S. Norris, M.D. 122
Intestinal obstruction in newborn, surgery for (Editorial) 34
Intestine, staphylococcal superinfection of the (Editorial) 378
Investigations, Washington, Clark R. Mollenhoff 613
Iowa Association of Medical Assistants 47, 95, 155, 223, 289, 338, 389, 502, 556, 602, 672, 724
Iowa Association of the professions, plans are being made for ..... facing p. 602
Iowa Chapter of American Academy of General Practice 43, 93, 153, 224, 284, 332, 387, 501, 667, 723
Iowa Medical Society is sponsoring the creation of an areawide health facilities planning council ... facing p. 722
Iowa symposium on ecology of rabies, résumé of 38
Is your county missing an opportunity? (Editorial) 196
Ischemic heart disease, anesthesia and (Editorial) 143
Isoimmunization, RH, changing concepts in, Clifford P. Goplerud, M.D. 187
Itching may be a sign of cancer 500

JAMA urges use of brand names in prescriptions 145
Jacobs, James P., M.D., Adequate infertility investigation 119
Jordon, Philip D., Ph.D., And freely speak 557
Journal Book Shelf 41, 91, 159, 330, 386, 498, 547, 600, 665, 717
Juvenile delinquency, Judge Byron B. Conway 457

Kaung, D. T., M.D., Transfusion hemosiderosis 312
Kent, Thomas H., M.D., and James A. Clifton, M.D., Malabsorption syndrome in Iowa 643
King-Anderson Bill, 1965, is inferior to voluntary health insurance for near-needy elderly ..... facing p. 96
King-Anderson is still unwise (Editorial) 31
Klausner, Neal W., Ph.D., Philosophy and medicine: a common ground 677
Koelsche, Giles A., M.D., and George R. Green, M.D., Autoimmune disease 528
Kolouch, Fred T., M.D., Ph.D., Role of the patient in surgical convalescence 363
Krehl, Willard A., M.D., Ph.D., and Robert E. Hodges, M.D., Risk of atherosclerotic coronary heart disease .. 177
Kugel, Robert B., M.D., and Burdellis L. Carter, R.N., Lack of immunization among elementary school children; study conducted in Iowa City 1

La Porte, Paul O., M.D., and Ralph E. Woodard, M.D., Neonatal spontaneous gastric perforation, with survival 72
Lack of immunization among elementary school children; study conducted in Iowa City, Burdellis L. Carter, R.N., and Robert B. Kugel, M.D. 1
Large aneurysm of internal carotid artery simulating eosinophilic adenoma, Kazem Fathie, M.D. 246
Larson, Carroll B., M.D., Care of the feet of the rheumatoid patient 68
Larynx, epidermoid carcinoma of, post-irradiation (UI-CPC) 189
Law and ethics 213
Lawrence J. Halpin, M.D. 206
Lawrence, Montague S., M.D., and Johann L. Ehrenhaft, M.D., Trauma to the thoracic aorta 637
Lawrence, Montague S., M.D., and Richard D. Liechty, M.D., Project Hope 175
Lest we ride off in all directions (Editorial) 140
Let's follow the National Safety Council's example (Editorial) 378
Letters to the Editor 145, 201, 542
Liechty, Richard D., M.D., and Montague S. Lawrence, M.D., Project Hope 175
Lipkind, Jason B., M.D., Cardiovascular disease in Iowa 469
Local public health services, physicians should urge the establishment or improvement of ..... facing p. 508
Lockie, L. Maxwell, M.D., Present-day diagnosis and treatment of gout 65
Loss of a parent, effects of 546
Lung lesions, surgical management of some common, Johann L. Ehrenhaft, M.D. 517

M.D. supply, future (among ads in January issue)
Muscular dystrophy 220
Malabsorption syndrome in Iowa, Thomas H. Kent, M.D., and James A. Clifton, M.D. 643
Male infertility, R. G. Bunge, M.D. 125
Malignancy, should we alter our perspective about gastric, W. Turner Bynum, M.D. 5
Management of missed abortion, Charles A. White, M.D. 461
Management of pain in anorectal surgery, Ralph H. Riegelman, M.D. 310
Manning, Ephraim L., M.D., Clinical impressions of external otitis 129
Manual of standards for ob-gyn, revised 158
Martin, Maurice J., M.D., Suicide: a continuing problem 533
Massive hemothorax (UI-CPC) 22
Maternal deaths: Iowa 1952-1961, Madelene M. Donnelly, M.D. 475
McLeran, James H., D.D.S., M.S., Communication between physician and dentist 579
Medical Day, Mercy Hospital, questions and answers 519
Medical progress has been rapid ..... facing p. 48
Medical students' expenditures (among ads in December issue)
Meningococcal meningitis (Editorial) 326
Menstrual problems, adolescent (among ads in July issue)
Mental health care, comprehensive, Paul E. Huston, M.D. 55
Mental retardation, clinical approach to certain postnatally acquired causes of, William E. Bell, M.D. 60

Mercy Hospital, clinicopathologic conference 522
Mercy Hospital Medical Day, questions and answers 519
Merry Christmas! (Editorial) 711
Milojevic, Bosko, M.D., Sc.D., Vestibular caloric testing and cupulometry 249
Minutes of the 1965 sessions of the IMS House of Delegates 397
Missed abortion, management of, Charles A. White, M.D. 461
Mitral stenosis and insufficiency (by clinical history), rheumatic heart disease with tricuspid stenosis, aortic stenosis, and (UI-CPC) 479
Mollenhoff, Clark R., Washington investigations 613
Mononucleosis in aged, Roy W. Overton, M.D., and William Shutze, M.D. 18
Month in Washington (among ads in each issue)
Morality and welfare state—president's address, Otis D. Wolfe, M.D. 297
Mortality in fractures of hip (Editorial) 197
Most of these 1963 deaths from uterine cancer in Iowa could have been prevented 204
Munchausen's syndrome, case report and brief discussion, M. Don George, M.D., and J. S. Cheatham, M.D. 20

National Safety Council's example, let's follow the (Editorial) 378
Nelson, Herbert L., M.D., Report on survey of attitudes of physicians with patients in after-care homes 215
Neonatal spontaneous gastric perforation, with survival, Paul A. La Porte, M.D., and Ralph E. Woodard, M.D. .. 72
Neurocirculatory asthenia (Editorial) 140
Neurologic complications of diabetes mellitus: symposium, M. W. VanAllen, M. D., R. W. Fincham, M.D., and D. B. Stone, M.B. 239
"New" idea, a (Editorial) 596
New psychiatric wing at Des Moines hospital 275
New semi-synthetic penicillin 290
New triumph for fluoridation (Editorial) 34
New virus laboratory in Iowa City (Editorial) 487
Newborn, surgery for intestinal obstruction in (Editorial) 34
Next twenty years in higher education, Howard R. Bowen, Ph.D. 349
1965 annual meeting of AMA, Donovan F. Ward, M.D. .. 202
1965 annual meeting of IMS, all physicians should attend ..... facing p. 220
1965 King-Anderson Bill is inferior to voluntary health insurance for near-needy elderly ..... facing p. 96
Ninth Blank Memorial pediatric conference 71
Nonunion of fractures (Editorial) 269
Norris, A. S., M.D., Psychological aspects of infertility .. 122
Notes on gold-headed cane, William B. Bean, M.D. 172
Nurseries, aborting staph epidemics in newborn 222
Nursing homes, Iowa, U. of I. survey of (among ads in February issue)
Nursing homes require our attention (Editorial) 377
Nutrition study continues, U. of I. 715

Ob-gyn, revised manual of standards for 158
Observations on recognition of prediabetes and diabetes mellitus, Patrick D. Robertson, M.B., and Daniel B. Stone, M.B. 181
Officers and committees, Iowa Medical Society 453
Officers, county medical society 456
Olin, William H., D.D.S., M.S., William C. Huffman, M.D., and James W. Schweiger, D.D.S., M.S., Congenital pits of the lower lip associated with cleft lip and palate: a case report 698
Olson, Arthur M., M.D., Evaluation of dyspnea 513
Omaha immunizations, shortcomings of (Editorial) 325
Once upon a time (Editorial) 714
Organized medicine at all levels conducts continuing programs for health-care betterment ..... facing p. 554
Osteoporosis, changing concepts in, David D. Hunt, M.D. 563
Otitis, external, clinical impressions of, Ephraim L. Manning, M.D. 129
Our heritage of greatness 562
Our youth problem (Editorial) 324
Outpatient speech and hearing clinic, U. of I. (among ads in November issue)
Overton, Roy W., M.D., and William Shutze, M.D., mononucleosis in aged 18

Pancytopenia, hypoplasia of bone marrow, severe, with (UI-CPC) 651
Pattern for retirement (Editorial) 140
Pediatric conference, Ninth Blank Memorial 71
Personals (among ads in each issue)
Penicillin, new semi-synthetic 290
Perforation of diverticulum of sigmoid colon (UI-CPC) 132
Phenylketonuria 227
Philadelphia doctors warn of hospital system collapse (among ads in January issue)
Philosophy and medicine: a common ground, Neal W. Klausner, Ph.D. 677
Physical examination, complete and thorough (Editorial) 200
Physician-pharmacist cooperation, Robert B. Throckmorton ..... facing p. 664
Physician's service a bargain (among ads in Nevember issue)
Physicians should urge the establishment or improvement of local public health services ..... facing p. 508
Physicians want to help their patients individually to maintain adequate immunizations ..... facing p. 338
Pity the unfortunate patient with hypertension 578
Placenta previa, panel discussion 626
Plans are being made for the formation of an Iowa association of the professions ..... facing p. 602
Please take part in readership survey (Editorial) 31

Pneumonia vaccine, experimental (among ads in May issue)
Post-natally acquired causes of mental retardation, clinical approach to certain, William E. Bell, M.D. 60
Postpartum tub baths (Editorial) 540
Practical control of home medication (Editorial) 596
Preceptorships (among ads in December issue)
Prediabetes and diabetes mellitus, observations on recognization of, Patrick D. Robertson, M.B., and Daniel B. Stone, M.B. 181
Prednisone for herpes zoster (Editorial) 32
Prayer, a (Editorial) 541
Pregnancy in diabetic patient (Editorial) 269
Pregnant patient, drugs and (Editorial) 199
Present-day diagnosis and treatment of Gout, L. Maxwell Lockie, M.D. 65
President's address—morality and welfare state, Otis D. Wolfe, M.D. 297
President's page 40, 90, 146, 205, 276, 329, 384, 493, 544, 599, 663, 716
Prevention of alcoholic addiction, ten commandments for the 516
Prevention of coronary artery disease (Editorial) 491
Prevention of gas gangrene (Editorial) 379
Preventive for toxic effects of chloramphenicol (Editorial) 198
Preventive treatment in tuberculosis 335
Prices of drugs, continued decline in 486
Project Hope, Montague S. Lawrence, M.D., and Richard D. Liechty, M.D. 175
Psychological aspects of infertility, A. S. Norris, M.D.. 122
Public health meeting in Storm Lake (Editorial) 598
Pyelonephritis, acute, severe, left: chronic pyelonephritis, bilateral (UI-CPC) 701

Rabies, résumé of Iowa symposium on ecology of 38
Radiation therapy and your patient, J. W. J. Carpender, M.D. 621
Reactions, untoward, to drugs used in initial chemotherapy of cavitary tuberculosis 332
Readership survey, please take part in (Editorial) 31
Reappraisal of estrogen therapy for breast engorgement (Editorial) 711
Recognition of prediabetes and diabetes mellitus, observations on, Patrick D. Robertson, M.B., and Daniel B. Stone, M.B. 181
Recommendations from Academy of Pediatrics 156
Rectus abdominis muscle, spontaneous rupture of the, John L. Beattie, M.D. 696
Reform of boxing, AMA suggestions for the 492
Rejectees, remedial care for draft (among ads in September issue)
Renal arteriography by the percutaneous transfemoral catheter method, Steven H. Cornell, M.D. 569
Report on survey of attitudes of physicians with patients in after-care homes, Herbert L. Nelson, M.D. 215
Residency program in child psychiatry in Des Moines .. 290
Respiratory syncytial virus infection, F. Howell Wright, M.D. 301
Résumé of Iowa symposium on ecology of rabies 38
Retirement, pattern for (Editorial) 140
Revised manual of standards for ob-gyn 158
RH isoimmunization, changing concepts in, Clifford P. Goplerud, M.D. 187
Rheumatic heart disease with tricuspid stenosis, aortic stenosis, and mitral stenosis and insufficiency (by clinical history) (UI-CPC) 479
Rheumatoid patient, care of the feet of the, Carroll B. Larson, M.D. 68
Riegelman, Ralph H., M.D., Management of pain in anorectal surgery 310
Risk of atherosclerotic coronary heart disease, Willard A. Krehl, M.D., Ph.D., and Robert E. Hodges, M.D. 177
Robertson, Patrick D., M.B., and Daniel B. Stone, M.B.. Observations on recognition of prediabetes and diabetes mellitus 181
Role of the patient in surgical convalescence, Fred T. Kolouch, M.D., Ph.D. 363
Rural Health Conference, 18th AMA National 279

Safer automobiles (Editorial) 597
School health, guidelines for 543
Schweiger, James W., D.D.S., M.S., William H. Olin, D.D.S., M.S., and William C. Huffman, M.D., Congenital pits of the lower lip associated with cleft lip and palate: a case report 698
Sclerosis, amyotrophic lateral, severe, with emaciation (UI-CPC) 371
Seat belts, automobile 724
Shock, should we change our treatment for (Editorial) .. 33
Short courses at Iowa City 382
Shortcomings of Omaha immunizations (Editorial) 325
Should we alter our perspective about gastric malignancy?, W. Turner Bynum, M.D. 5
Should we change our treatment for shock? (Editorial) .. 33
Shutze, William, M.D., and Roy W. Overton, M.D., mononucleosis in aged 18
Sigmoid colon, perforation of diverticulum of (UI-CPC) 132
Smoking, cigarette (Editorial) 537
Social characteristics of 100 alcoholic patients, John Clancy, M.D., and Richard Vornbrock, ACSW 235
Solomons, Gerald, M.D., Hyperactive child 464
Speech and hearing clinic, U. of I. outpatient (among ads in November issue)
Spontaneous rupture of the rectus abdominis muscle, John L. Beattie, M.D. 696
Staph epidemics in newborn nurseries, aborting 222
Staphylococcal superinfection of the intestine (Editorial) 378
State Department of Health 48, 97, 161, 225, 286, 339, 392, 504, 549, 605, 668, 720
Statement on intrauterine contraceptives (among ads in May issue)
Stone, D. B., M.B., *et al.*, Neurologic complications of diabetes mellitus: symposium 239
Stone, Daniel B., M.B., and Patrick D. Robertson, M.B., Observations on recognition of prediabetes and diabetes mellitus 181
Suicide: a continuing problem, Maurice J. Martin, M.D. . 533
Sunderbruch, J. H., M.D., Case against typhoid immunizations during flood periods 478
Surgery for intestinal obstruction in newborn (Editorial) 34
Surgery, management of pain in anorectal, Ralph H. Riegelman, M.D. 310
Surgery of the biliary tract: a symposium 687
Surgical convalescence, role of the patient in, Fred T. Kolouch, M.D., Ph.D. 363
Surgical management of some common lung lesions, Johann L. Ehrenhaft, M.D. 517
Survey of attitudes of physicians with patients in after-care homes, report on, Herbert L. Nelson, M.D. 215

Tell children the truth 300
Temporal bone banks program, deafness and the (Editorial) 662
Ten commandments for the prevention of alcoholic addiction 516
Ten commandments for professional man (Editorial) 196
Thanks to doctors and nurses (Editorial) 711
Theory about endemic character of chickenpox (Editorial) 271
Thoracic aorta, trauma to the, Montague S. Lawrence, M.D., and Johann L. Ehrenhaft, M.D. 637
Throckmorton, Robert B., Physician-pharmacist cooperation ..... facing p. 664
Thyrotoxicosis in childhood (Editorial) 87
Tourney, Garfield, M.D., Peter G. S. Beckett, M.D., and Jacques S. Gottlieb, M.D., Atypical depressive illnesses 253
Tracheotomy (Editorial) 272
Transfusion hemosiderosis, D. T. Kaung, M.D. 312
Transfusions in erythroblastosis fetalis, fetal (Editorial) 661
Trauma to the thoracic aorta, Montague S. Lawrence, M.D., and Johann L. Ehrenhaft, M.D. 637
Treatment of fat embolism (Editorial) 33
Treatment of the fractured ankle, W. R. Hamsa, M.D., and D. W. Burney, Jr., M.D. 353
Tricuspid stenosis, aortic stenosis, and mitral stenosis and insufficiency (by clinical history), rheumatic heart disease with (UI-CPC) 479
Tub baths, postpartum (Editorial) 540
Tuberculosis, final steps in eradicating (Editorial) 541
Typhoid immunizations during flood periods, case against, J. H. Sunderbrunch, M.D. 478
Tuberculosis, preventive treatment in 335
Tuberculosis, untoward reactions to drugs used in initial chemotherapy of cavitary 332

U. of I. College of Medicine, Clinical Pathologic Conference 22, 75, 132, 189, 260, 316, 371, 479, 588, 651, 701
U. of I. Conference on infertility and endocrinology 89
U. of I. nutrition study continues 715
U. of I. outpatient speech and hearing clinic (among ads in November issue)
U. of I. survey of Iowa nursing homes (among ads in February issue)
USPHS films (among ads in May issue)
Unhealed fracture, posterior table of right frontal sinus (UI-CPC) 316
Untoward reactions to drugs used in initial chemotherapy of cavitary tuberculosis 332
Uterine cancer, most of these 1963 deaths from, in Iowa could have been prevented 204

VanAllen, M. W., M.D., R. W. Fincham, M.D., and D. B. Stone, M.B., Neurologic complications of diabetes mellitus: symposium 239
VD, AMA campaign against rising 601
Venereal disease reports (Editorial) 380
Virus infection, respiratory syncytial, F. Howell Wright, M.D. 301
Virus laboratory in Iowa City, new (Editorial) 487
Visiting-nurse benefits, Blue Cross 500
Vestibular caloric testing and cupulometry, Bosko Milojevic, M.D., Sc.D. 249
Volvulus, small bowel, with obstruction and early hemorrhagic infarction, secondary to fibrous adhesion (UI-CPC) 588
Vornbrock, Richard, ACSW, and John Clancy, M.D., Social characteristics of 100 alcoholic patients 235

Ward, Donovan F., M.D., 1965 annual meeting of AMA .. 202
Washington investigations, Clark R. Mollenhoff 613
White, Charles A., M.D., Management of missed abortion 461
Whooping cough can still occur, epidemics of (Editorial) 661
Wolfe, Otis D., M.D., Morality and welfare state—President's address 297
Woman's Auxiliary to Iowa Medical Society, every doctor's wife should be member of ..... facing p. 158
Woman's Auxiliary News 51, 101, 165, 229, 291, 345, 394, 509, 552, 609, 673, 725
Woodard, Ralph E., M.D., and Paul A. La Porte, M.D., Neonatal spontaneous gastric perforation, with survival 72
Wright, F. Howell, M.D., Respiratory syncytial virus infection 301

MW

THE LIBRARY
UNIVERSITY OF CALIFORNIA
San Francisco Medical Center
THIS BOOK IS DUE ON THE LAST DATE STAMPED BELOW

7 DAY LOAN

7 DAY
RETURNED
AUG 26 1966
7 DAY
DEC 20 1966
RETURNED
DEC 14 1966

RETURNED
JAN 20 1967

7 DAY
RETURNED
MAR 29 1967
MAR 30 1967
7 DAY
MAY 25 1967
RETURNED
MAY 26 1967
JUN 6 1967
INTERLIBRARY LOAN
2 DAYS AFTER RECEIPT
Calif. Society for Med. Improvement

RETURNED
JUN 23 1967

AUG 9 1967
RETURNED
AUG 31
7 DAY
RETURNED
MAY 23 1968
MAY 18 1968

10m-1,'66(G273s4)4315

St.

196166